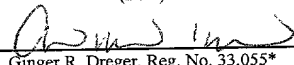


IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Stanton et al.	)	Group Art Unit Unknown
)	
Appl. No.	:	Unknown	)	I hereby certify that this correspondence and all
			)	marked attachments are being deposited with
Filed	:	Herewith	)	the United States Postal Service as first-class
			)	mail in an envelope addressed to: Assistant
For	:	SECRETED FACTORS	)	Commissioner for Patents, Washington, D.C.
			)	20231, on
			)	<u>March 14, 2001</u>
			)	(Date)
Examiner	:	Unknown)	<u></u>
			)	Ginger R. Dreger, Reg. No. 33,055*

SEQUENCE SUBMISSION STATEMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

A copy of the Sequence Listing in computer readable form as required by 37 C.F.R. §1.821(e) is submitted herewith.

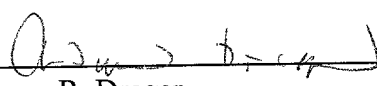
As required by 37 C.F.R. §1.82(e), the data on the enclosed disk is identical to the Sequence Listing in the application filed herewith.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: March 14, 2001

By: 
Ginger R. Dreger
Registration No. 33,055
Attorney of Record
620 Newport Center Drive
Sixteenth Floor
Newport Beach, CA 92660
(415) 954-4114

1845	1846	1847	1848	1849	1850	1851	1852	1853	1854	1855	1856	1857	1858	1859	1860	1861	1862	1863	1864	1865	1866	1867	1868	1869	1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253</
------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	--------

<120> SECRETED FACTORS

<150> US 60/193,548

<160> 70

<170> FastSEO for Windows Version 4.0

<210> 1

<211> 1340

<212> DNA

<213> Rattus norvegicus

 $\langle 220 \rangle$

<221> CDS

<222> (195) ... (674)

<400> 1

gcggccgccc	ctgacacaat	ggctcagctt	atgcctcage	gcagttcgct	ccaccccaga	60
atggcattcct	gcagaataca	cggcccctca	tccccatccc	gcgccagaga	caccggccag	120
cccactgtcc	ccgccacaca	ttaaacttga	tctctctaca	cagacgcact	cggagcagag	180
cgcttataca	agcg	cac	agc	cgt	ctc	cg
		cac	aca	gac	aga	tga
		His	Ser	Arg	Leu	Arg
		His	Arg	His	Thr	Asp
		Arg	His	Thr	Asp	Arg
		*				

tgc cgc ccc gac cga cgg cca gcc cca gac aca acc ttc tga aaa cac 278
Cys Arg Pro Asp Arg Arg Pro Ala Pro Asp Thr Thr Phe * Lys His
15 20 25

aga aaa caa gtc cca gcc caa gcg gct gca tgt gtc caa cat ccc ctt 326
Arg Lys Gln Val Pro Ala Gln Ala Ala Cys Val Gln His Pro Leu
30 35 40

ccg gtt ccg gga tcc aga cct ccg aca aat gtt tgg cca att tgg taa 374
Pro Val Pro Gly Ser Arg Pro Pro Thr Asn Val Trp Pro Ile Trp *
45 50 55

aat att aga tgt tga aat tat ttt taa tga gcg ggg ctc gaa ggg att 422
Asn Ile Arg Cys * Asn Tyr Phe * * Ala Gly Leu Glu Gly Ile
60 65 70

tgg ttt cgt aac ttt cga aaa tag tgc gga tgc gga cag ggc gag gga 470
 Trp Phe Arg Asn Phe Arg Lys * Cys Gly Cys Gly Gln Gly Glu Gly
 75 80 85

gaa att gca cgg tac cgt ggt aga ggg ccg taa aat cga ggt taa taa 518

Glu Ile Ala Arg Tyr Arg Gly Arg Gly Pro * Asn Arg Gly * *
 90 95

tgc gac agc acg cgt gat gac taa taa aaa ggc cgt gaa ccc cta cac 566
 Cys Asp Ser Thr Arg Asp Asp * * Lys Gly Arg Glu Pro Leu His
 100 105 110

caa tgg ctg gaa att aaa tcc agt tgt ggg cgc ggt cta cag ccc cga 614
 Gln Trp Leu Glu Ile Lys Ser Ser Cys Gly Arg Gly Leu Gln Pro Arg
 115 120 125

ctt cta tgc agg cac ggt gct gtt gtg cca ggc caa cca gga ggg atc 662
 Leu Leu Cys Arg His Gly Ala Val Val Pro Gly Gln Pro Gly Gly Ile
 130 135 140

ttc cat gta cag tggccccagt tcacttgat atacttctgc aatgcctggc 714
 Phe His Val Gln
 145

tttccatata cggccgccac tgctgcagct gcataccgag gggctcacct togaggcgt 774
 ggtgcaccg tgtacaacac cttcagagct gcggcgcccc ccccccaat cccggcctat 834
 ggcggagtag tgtatcaaga gccagtgtat ggcaataaat tgctacaggg tggttacgct 894
 gcataccgct acgcccagcc caccctgcc actgctgctg cctacagtga cagttacgga 954
 cgagtttatg ctgccgaccc ctaccaccac acacttgctc cagccccac ctacggcggt 1014
 ggtgccatga atgcttttgc gcccttgacc gatgccaaaga ctaggagcca tgctgatgat 1074
 gtgggtctcg ttctttcttc attgcaggct agtatatacc aagggggata caaccgtttt 1134
 gctccatatt aaatgataaa accattaaac aaacaagcaa aaaacaaaac aaaaacaaaa 1194
 aaaccaacct tccaatgtgg ggagagagga agctttccga ggcccgagtg ttgcgacaca 1254
 tgcagtagga catcacttta gcaactcaaa gaaacaacga aaaaaaaaaa aaaaaaaaaa 1314
 ataagcggcc gaaggggttc gctaga 1340

<210> 2
 <211> 148
 <212> PRT
 <213> Rattus norvegicus

<400> 2
 His Ser Arg Leu Arg His Arg His Thr Asp Arg Cys Arg Pro Asp Arg
 1 5 10 15
 Arg Pro Ala Pro Asp Thr Thr Phe Lys His Arg Lys Gln Val Pro Ala
 20 25 30
 Gln Ala Ala Ala Cys Val Gln His Pro Leu Pro Val Pro Gly Ser Arg
 35 40 45
 Pro Pro Thr Asn Val Trp Pro Ile Trp Asn Ile Arg Cys Asn Tyr Phe
 50 55 60
 Ala Gly Leu Glu Gly Ile Trp Phe Arg Asn Phe Arg Lys Cys Gly Cys
 65 70 75 80
 Gly Gln Gly Glu Gly Glu Ile Ala Arg Tyr Arg Gly Arg Gly Pro Asn
 85 90 95
 Arg Gly Cys Asp Ser Thr Arg Asp Asp Lys Gly Arg Glu Pro Leu His
 100 105 110
 Gln Trp Leu Glu Ile Lys Ser Ser Cys Gly Arg Gly Leu Gln Pro Arg
 115 120 125
 Leu Leu Cys Arg His Gly Ala Val Val Pro Gly Gln Pro Gly Gly Ile
 130 135 140
 Phe His Val Gln
 145

<210> 3
 <211> 867
 <212> DNA
 <213> Rattus norvegicus

<220>
 <221> CDS
 <222> (215)...(796)

<221> misc_feature
 <222> (1)...(867)
 <223> n = A,T,C or G

<400> 3
 tctagcgaac cccttcgcga aggggttcgc ctgtgctggt gggcgcggtg gcccgaaagcc 60
 ttggactcac tgcaggactg tgcagggaac cactgtccaa gcacgaggct aatagggggc 120
 gcctgcctcg gttaccctt cagcgtctgg tgaaatcccg cagcgtctag ggaaagatcc 180
 gttctgctcc gcgagggaaa cagagccggt gacc atg gtt gca acg ggc agt ttg 235
 Met Val Ala Thr Gly Ser Leu
 1 5
 agc agt aag aac acg gcc agc att tca gag ttg ctg gac ggt ggc tct 283
 Ser Ser Lys Asn Thr Ala Ser Ile Ser Glu Leu Leu Asp Gly Gly Ser
 10 15 20
 cac cct ggg agt ctg cta agt gat ttc gac tac tgg gat tat gtc gtc 331
 His Pro Gly Ser Leu Leu Ser Asp Phe Asp Tyr Trp Asp Tyr Val Val
 25 30 35
 cct gag ccc aac ctc aac gag gtg gtg ttt gaa gag aca aca tgc cag 379
 Pro Glu Pro Asn Leu Asn Glu Val Val Phe Glu Glu Thr Thr Cys Gln
 40 45 50 55
 aat ttg gtt aaa atg ttg gag aac tgt ctg tcc aag tca aag caa acc 427
 Asn Leu Val Lys Met Leu Glu Asn Cys Leu Ser Lys Ser Lys Gln Thr
 60 65 70
 aaa ctc ggt tgc tct aag gtc ctg gtt cct gag aaa ctg acc cag aga 475
 Lys Leu Gly Cys Ser Lys Val Leu Val Pro Glu Lys Leu Thr Gln Arg
 75 80 85
 att gcc caa gat gtc ctg cgg ctc tca tcc aca gag ccc tgc ggc ctt 523
 Ile Ala Gln Asp Val Leu Arg Leu Ser Ser Thr Glu Pro Cys Gly Leu
 90 95 100
 cgg ggc tgt gtt atg cac gtg aac ttg gaa att gaa aat gtg tgt aaa 571
 Arg Gly Cys Val Met His Val Asn Leu Glu Ile Glu Asn Val Cys Lys
 105 110 115
 aag ctg gat agg att gtg tgt gat gct agt gtg gtg ccg acc ttt gag 619
 Lys Leu Asp Arg Ile Val Cys Asp Ala Ser Val Val Pro Thr Phe Glu
 120 125 130 135
 ctc acg ctg gtg ttc aag cag gag agc tgc tcc tgg acc agc ctc aag 667
 Leu Thr Leu Val Phe Lys Gln Glu Ser Cys Ser Trp Thr Ser Leu Lys
 140 145 150

gac ttc ttc ttt agc gga ggt cgc ttc tcg tcg ggc ctt aag cga act 715
 Asp Phe Phe Phe Ser Gly Gly Arg Phe Ser Ser Gly Leu Lys Arg Thr
 155 160 165

ctg atc ctc agc tcg gga ttt cga ctt gtt aag aaa aaa ctg tac tct 763
 Leu Ile Leu Ser Ser Gly Phe Arg Leu Val Lys Lys Lys Leu Tyr Ser
 170 175 180

ctg att gga acg aca gtc att gag gag tgc tga ggaggaaaaa acaattaaag 816
 Leu Ile Gly Thr Thr Val Ile Glu Glu Cys *
 185 190

gtccctaattg agtggctaac aaaaaaaaaa nnnnnnnnnn nnnnngcggn c 867

<210> 4
 <211> 193
 <212> PRT
 <213> Rattus norvegicus

<400> 4
 Met Val Ala Thr Gly Ser Leu Ser Ser Lys Asn Thr Ala Ser Ile Ser
 1 5 10 15
 Glu Leu Leu Asp Gly Gly Ser His Pro Gly Ser Leu Leu Ser Asp Phe
 20 25 30
 Asp Tyr Trp Asp Tyr Val Val Pro Glu Pro Asn Leu Asn Glu Val Val
 35 40 45
 Phe Glu Glu Thr Thr Cys Gln Asn Leu Val Lys Met Leu Glu Asn Cys
 50 55 60
 Leu Ser Lys Ser Lys Gln Thr Lys Leu Gly Cys Ser Lys Val Leu Val
 65 70 75 80
 Pro Glu Lys Leu Thr Gln Arg Ile Ala Gln Asp Val Leu Arg Leu Ser
 85 90 95
 Ser Thr Glu Pro Cys Gly Leu Arg Gly Cys Val Met His Val Asn Leu
 100 105 110
 Glu Ile Glu Asn Val Cys Lys Lys Leu Asp Arg Ile Val Cys Asp Ala
 115 120 125
 Ser Val Val Pro Thr Phe Glu Leu Thr Leu Val Phe Lys Gln Glu Ser
 130 135 140
 Cys Ser Trp Thr Ser Leu Lys Asp Phe Phe Phe Ser Gly Gly Arg Phe
 145 150 155 160
 Ser Ser Gly Leu Lys Arg Thr Leu Ile Leu Ser Ser Gly Phe Arg Leu
 165 170 175
 Val Lys Lys Lys Leu Tyr Ser Leu Ile Gly Thr Thr Val Ile Glu Glu
 180 185 190
 Cys

<210> 5
 <211> 874
 <212> DNA
 <213> Rattus norvegicus

<220>
 <221> CDS
 <222> (42)...(752)

<400> 5

tctagcgaac cccttcggtg gacagaacag cctgagtcag g atg aaa gct ctc agg	56
Met Lys Ala Leu Arg	
1 5	
gct gtc ctc ctg atc ttg cta ctc agt gga cag cca ggg agc agc tgg	104
Ala Val Leu Leu Ile Leu Leu Leu Ser Gly Gln Pro Gly Ser Ser Trp	
10 15 20	
gca caa gaa gct ggc gat gtg gac ctg gag cta gag cgc tac agc tac	152
Ala Gln Glu Ala Gly Asp Val Asp Leu Glu Leu Glu Arg Tyr Ser Tyr	
25 30 35	
gat gat gac ggt gat gac gat gat gac gat gat gaa gaa gag gaa gag	200
Asp Asp Asp Gly Asp Asp Asp Asp Asp Asp Asp Glu Glu Glu Glu Glu	
40 45 50	
gag gag acc aac atg atc cct ggc agc agg gac aga gca ccg cct cta	248
Glu Glu Thr Asn Met Ile Pro Gly Ser Arg Asp Arg Ala Pro Pro Leu	
55 60 65	
cag tgc tac ttc tgc caa gtg ctt cac agc ggg gag agc tgc aac gag	296
Gln Cys Tyr Phe Cys Gln Val Leu His Ser Gly Glu Ser Cys Asn Glu	
70 75 80 85	
aca cag aga tgc tcc agc agc aag ccc ttc tgt atc aca gtc atc tcc	344
Thr Gln Arg Cys Ser Ser Ser Lys Pro Phe Cys Ile Thr Val Ile Ser	
90 95 100	
cat ggc aaa act gac aca ggt gtc ctg acg acc tac tcc atg tgg tgt	392
His Gly Lys Thr Asp Thr Gly Val Leu Thr Thr Tyr Ser Met Trp Cys	
105 110 115	
act gat acc tgc cag ccc atc gtg aag aca gtg gac agc acc caa atg	440
Thr Asp Thr Cys Gln Pro Ile Val Lys Thr Val Asp Ser Thr Gln Met	
120 125 130	
acc cag acc tgt tgc cag tcc aca ctc tgc aat att cca ccc tgg cag	488
Thr Gln Thr Cys Cys Gln Ser Thr Leu Cys Asn Ile Pro Pro Trp Gln	
135 140 145	
agc ccc caa atc cac aac cct ctg ggt ggc cgg gca gac agc ccc ttg	536
Ser Pro Gln Ile His Asn Pro Leu Gly Gly Arg Ala Asp Ser Pro Leu	
150 155 160 165	
aag ggt ggg acc aga cat cct caa ggt gac agg ttt agc cac ccc cag	584
Lys Gly Gly Thr Arg His Pro Gln Gly Asp Arg Phe Ser His Pro Gln	
170 175 180	
gtt gtc aag gtt act cat cct cag agt gat ggg gct cac ttg tct aag	632
Val Val Lys Val Thr His Pro Gln Ser Asp Gly Ala His Leu Ser Lys	
185 190 195	
ggt ggc aag gct aac cag ccc cag gga aat ggg gcc gga ttc cct gca	680
Gly Gly Lys Ala Asn Gln Pro Gln Gly Asn Gly Ala Gly Phe Pro Ala	
200 205 210	

ggc tgg agc aaa ttt ggt aac gta gtt ctc ctg ctc acc ttc ctc acc 728
 Gly Trp Ser Lys Phe Gly Asn Val Val Leu Leu Leu Thr Phe Leu Thr
 215 220 225

agt ctg tgg gca tca ggg gcc taa agactcgtcc tcccccaacc aggacccttc 782
 Ser Leu Trp Ala Ser Gly Ala *
 230 235

agcctttcct ccctgacaac cagcttcaga gaataaactt gaatgtcttt tgccatctaa 842
 aaaaaaaaaa aaaaaaaaaa aaagcggccg cc 874

<210> 6
 <211> 236
 <212> PRT
 <213> Rattus norvegicus

<400> 6
 Met Lys Ala Leu Arg Ala Val Leu Leu Ile Leu Leu Leu Ser Gly Gln
 1 5 10 15
 Pro Gly Ser Ser Trp Ala Gln Glu Ala Gly Asp Val Asp Leu Glu Leu
 20 25 30
 Glu Arg Tyr Ser Tyr Asp Asp Asp Gly Asp Asp Asp Asp Asp Asp Asp
 35 40 45
 Glu Glu Glu Glu Glu Glu Glu Thr Asn Met Ile Pro Gly Ser Arg Asp
 50 55 60
 Arg Ala Pro Pro Leu Gln Cys Tyr Phe Cys Gln Val Leu His Ser Gly
 65 70 75 80
 Glu Ser Cys Asn Glu Thr Gln Arg Cys Ser Ser Ser Lys Pro Phe Cys
 85 90 95
 Ile Thr Val Ile Ser His Gly Lys Thr Asp Thr Gly Val Leu Thr Thr
 100 105 110
 Tyr Ser Met Trp Cys Thr Asp Thr Cys Gln Pro Ile Val Lys Thr Val
 115 120 125
 Asp Ser Thr Gln Met Thr Gln Thr Cys Cys Gln Ser Thr Leu Cys Asn
 130 135 140
 Ile Pro Pro Trp Gln Ser Pro Gln Ile His Asn Pro Leu Gly Gly Arg
 145 150 155 160
 Ala Asp Ser Pro Leu Lys Gly Gly Thr Arg His Pro Gln Gly Asp Arg
 165 170 175
 Phe Ser His Pro Gln Val Val Lys Val Thr His Pro Gln Ser Asp Gly
 180 185 190
 Ala His Leu Ser Lys Gly Gly Lys Ala Asn Gln Pro Gln Gly Asn Gly
 195 200 205
 Ala Gly Phe Pro Ala Gly Trp Ser Lys Phe Gly Asn Val Val Leu Leu
 210 215 220
 Leu Thr Phe Leu Thr Ser Leu Trp Ala Ser Gly Ala
 225 230 235

<210> 7
 <211> 817
 <212> DNA
 <213> Rattus norvegicus

<220>
 <221> CDS
 <222> (135)...(320)

<221> misc_feature
<222> (1)...(817)
<223> n = A,T,C or G

<400> 7
tctagcgaac cccttcgagc gaaccccttc ggccagtacc ctgagccctg gtcctctctg 60
gagctgcccc acagctctga ctgtggactg agggatgtta ggcggatcac ctgagcctcc 120
agaggctcac acta atg agc ggg cgc tct ctt ctt agc cac tgt tgc att 170
Met Ser Gly Arg Ser Leu Leu Ser His Cys Cys Ile
1 5 10

tgg ttt tca ttg act cct ggg cct cgt ttg agt gac act gtc ctt gtc 218
Trp Phe Ser Leu Thr Pro Gly Pro Arg Leu Ser Asp Thr Val Leu Val
15 20 25

ttt tgt ttc aga gct ctc cca gtg tta gtg gac tca gat gag gaa att 266
Phe Cys Phe Arg Ala Leu Pro Val Leu Val Asp Ser Asp Glu Glu Ile
30 35 40

atg acc aga tct gaa ata gct gaa aaa atg ttc tct tca gaa aag ata 314
Met Thr Arg Ser Glu Ile Ala Glu Lys Met Phe Ser Ser Glu Lys Ile
45 50 55 60

atg tga tcagggcccc agtgggtcca gtgtgcatgg gagcgcggtc aggtgatggg 370
Met *

aaaggcctgg ctctcgtcaa aactgacagc tgcgctatga tacatgtctc actttgttgt 430
cttggagatc tgtgtatgca ggtgaagaac tcaagtgtgg gagggctctgc cgcctcagaa 490
agccatcttt gaaacggact cataaagtca gttttgttgc cattaagttg cctgattttg 550
gaaacaattt aagaagtgtt aaagacatgt gttcagatgc ctcttaggag gcagccacag 610
gcatgccagg ttgtgtccct cagttttctc cagacaaaag aatctgcagc tgggctgtggc 670
ggcacactac tggcagttga aagtctgtaa tttcaaggcc aagcctggtc tacatagttc 730
caggacaacc agagagatct acatagttag accctgcctc aaaacacaga aaccnnanna 790
naaaaaaaaa aaaaaaaaaa cggccgc 817

<210> 8
<211> 61
<212> PRT
<213> Rattus norvegicus

<400> 8
Met Ser Gly Arg Ser Leu Leu Ser His Cys Cys Ile Trp Phe Ser Leu
1 5 10 15
Thr Pro Gly Pro Arg Leu Ser Asp Thr Val Leu Val Phe Cys Phe Arg
20 25 30
Ala Leu Pro Val Leu Val Asp Ser Asp Glu Glu Ile Met Thr Arg Ser
35 40 45
Glu Ile Ala Glu Lys Met Phe Ser Ser Glu Lys Ile Met
50 55 60

<210> 9
<211> 755
<212> DNA
<213> Rattus norvegicus

<220>

<221> CDS
<222> (139)...(378)

<221> misc_feature
<222> (1)...(755)
<223> n = A,T,C or G

<400> 9
tctagcgaac cccttcgcac atgggttcct gctgaccaag gggacatggc tctgaagatg 60
atgaggctgg ttactcagca ggagtagctg agctgagctg gccctggagg ccctggaggg 120
cctggagtag ggcccagg atg cag gtg cta atg tot atc ccc ggc gct ctt 171
Met Gln Val Leu Met Ser Ile Pro Gly Ala Leu
1 5 10

ctt ccc gac tct acc atg gga tgt aac tcc agg agc ccc tgc cat ctc 219
Leu Pro Asp Ser Thr Met Gly Cys Asn Ser Arg Ser Pro Cys His Leu
15 20 25

ccg tac caa aag act gtg gct tcc gtg tot act cag aaa tca gtt cta 267
Pro Tyr Gln Lys Thr Val Ala Ser Val Ser Thr Gln Lys Ser Val Leu
30 35 40

ctt cgt aaa cag tgt tta aaa cca gac tca ttt aat cag agt gaa gga 315
Leu Arg Lys Gln Cys Leu Lys Pro Asp Ser Phe Asn Gln Ser Glu Gly
45 50 55

ttg cag tcc att ggc ttc tta gca cag aag cag ctg ata aca caa gta 363
Leu Gln Ser Ile Gly Phe Leu Ala Gln Lys Gln Leu Ile Thr Gln Val
60 65 70 75

aac ccc agc cct tga gaggtagaag caagaggatc agaggttcaa gcgcatactc 418
Asn Pro Ser Pro *

ggctccatca caagttcaaa agccgcctgc accaaatggg agtccttgct tcaaaaaaaaa 478
aaaaaaaaaa agcaaagaaa gcaaaggact cgatgacatg atttatagac aaaagcagtg 538
ggagaaaaata ctaaagcccc actgagctgc cagccagggtg tctgtgacta caggctctttt 598
atctgctcat atatattttt acaaaaaatg aaattcatat tggtoctat tttgctggct 658
gctttgctcc cgatcaacat gatttgcacg ttttttccat caataaatgt gccatgatat 718
ttttaaaaaa aaaaaaaaaa aaaaaaaaaa gggcnc 755

<210> 10
<211> 79
<212> PRT
<213> Rattus norvegicus

<400> 10
Met Gln Val Leu Met Ser Ile Pro Gly Ala Leu Leu Pro Asp Ser Thr
1 5 10 15
Met Gly Cys Asn Ser Arg Ser Pro Cys His Leu Pro Tyr Gln Lys Thr
20 25 30
Val Ala Ser Val Ser Thr Gln Lys Ser Val Leu Leu Arg Lys Gln Cys
35 40 45
Leu Lys Pro Asp Ser Phe Asn Gln Ser Glu Gly Leu Gln Ser Ile Gly
50 55 60
Phe Leu Ala Gln Lys Gln Leu Ile Thr Gln Val Asn Pro Ser Pro
65 70 75

<210> 11
<211> 806
<212> DNA
<213> Rattus norvegicus

<220>
<221> CDS
<222> (68)...(346)

<221> misc_feature
<222> (1)...(806)
<223> n = A,T,C or G

<400> 11
tctagcgaac cccttcgcag ctctctgacc tgcgtcgccg ccgctctccg ctcttgattt 60
cgccgtg atg tcg acc gca atg aac ttc ggg acc aaa agc ttc cag ccg 109
Met Ser Thr Ala Met Asn Phe Gly Thr Lys Ser Phe Gln Pro
1 5 10

cgg ccc cca gac aaa ggc agc ttc ccg cta gac cac ttc ggt gag tgt 157
Arg Pro Pro Asp Lys Gly Ser Phe Pro Leu Asp His Phe Gly Glu Cys
15 20 25 30

aaa agc ttt aag gaa aaa ttc atg aag tgt ctc cgc gac aag aac tat 205
Lys Ser Phe Lys Glu Lys Phe Met Lys Cys Leu Arg Asp Lys Asn Tyr
35 40 45

gaa aat gct ctg tgc aga aat gaa tct aaa gag tat tta atg tgc agg 253
Glu Asn Ala Leu Cys Arg Asn Glu Ser Lys Glu Tyr Leu Met Cys Arg
50 55 60

atg caa agg cag ctg atg gca cca gaa cca cta gag aaa ctc ggc ttt 301
Met Gln Arg Gln Leu Met Ala Pro Glu Pro Leu Glu Lys Leu Gly Phe
65 70 75

aga gac ata atg gag gag aaa ccg gag gca aag gac aaa tgt tga 346
Arg Asp Ile Met Glu Glu Lys Pro Glu Ala Lys Asp Lys Cys *
80 85 90

gaatcactgg gctgtgtccc cctacctgga gcagagctga gccottctgc ccaccgtgga 406
gagagctgag ccatacctgtg ctgcccagag gaggggctct ccgtgtcgac tttggctcat 466
ccctgcagca cagaccaaac tgctttctct actgaccaca cttctgcttc agagagnngt 526
ttctcctgtc tgngtgtggc acaggatctg ctcanggtcg aacactgatg tgatatgata 586
tcccacctag tgtggccgca caccaaaagg cctggacagg atttcacagt gactcaacct 646
gagtcctcac acccggaacc tgtcagcgaa aaccaanoga agcaaaatgn ctggcttttg 706
gcttacaac cccatnattt gntttccctt ctcttgggtc tttgttttga caaanctggc 766
atacaaaagn ggaaggggga aataaaaaaa aaaaaaaaaa 806

<210> 12
<211> 717
<212> DNA
<213> Rattus norvegicus

<220>
<221> CDS
<222> (260)...(520)

<221> misc_feature
 <222> (1)...(717)
 <223> n = A,T,C or G

<400> 12
 tctagcgaac cccttcncga aggggttcgc cgagaggtgg gagccaaaag gatggagcat 60
 ccgcgggtgg tggctgggtgg ccgcaatctt ggtggctctg atcgggggtg tcttagtctg 120
 cctgatagtc tacttcgcca acgcagcgca cagcgaggcc tgtaagaacg ggttgcggtt 180
 gcaggatgag tgccgaaaca ccacgcacct gttgaagcac cagctnaccg gcgcccagga 240
 cagcctgctg cagacggag atg cag gca aac tcc tgc aac cag acc gtg atg 292
 Met Gln Ala Asn Ser Cys Asn Gln Thr Val Met
 1 5 10

gac ctt cgg gat tcc ctg aag aag aag gtg tct naa acc cag gag caa 340
 Asp Leu Arg Asp Ser Leu Lys Lys Lys Val Ser Xaa Thr Gln Glu Gln
 15 20 25

can gcc cgc atc aag gaa ctt gag aat aag atc gag agg ctg aac caa 388
 Xaa Ala Arg Ile Lys Glu Leu Glu Asn Lys Ile Glu Arg Leu Asn Gln
 30 35 40

gag ctg gag aaa ttt gag gac cca aaa gga aat ttc tac cac agt gca 436
 Glu Leu Glu Lys Phe Glu Asp Pro Lys Gly Asn Phe Tyr His Ser Ala
 45 50 55

ngt gaa ctc aag cgg gtt cgt ggt ggn ctt can cct act tgt gct ttg 484
 Xaa Glu Leu Lys Arg Val Arg Gly Gly Leu Xaa Pro Thr Cys Ala Leu
 60 65 70 75

tgg cgg gac tgt tct nca ctt ttt ang acc caa taa ttgggangta 530
 Trp Arg Asp Cys Ser Xaa Leu Phe Xaa Thr Gln *
 80 85

caaacctgtg taggcattgn nggtngtaat ggcttttgag ggggtcctgg cacccttaag 590
 atgtgaanac cattangnng gacccaaaat gnnttttctt gntttgaact ggggcggacc 650
 cggagtgggg ggcnggaaat aanntattnn ggngngaaan aaaaaaaaaa aaaaaaaaaa 710
 gcggccc 717

<210> 13
 <211> 1235
 <212> DNA
 <213> Rattus norvegicus

<220>
 <221> CDS
 <222> (53)...(163)

<221> misc_feature
 <222> (1)...(1235)
 <223> n = A,T,C or G

<400> 13
 tctagcgaac cccttcgccc agctgctaga agccaggctg gcctgggtgag gc atg agc 58
 Met Ser
 1

atg aag atg aac cca ggt gac aag gac aag atg ttg ctc ttc tcc cca 106
Met Lys Met Asn Pro Gly Asp Lys Asp Lys Met Leu Leu Phe Ser Pro
5 10 15

ccc ttt gac ccc tgt ctt cta agg cat cta gga agg aac cag tgt cct 154
Pro Phe Asp Pro Cys Leu Leu Arg His Leu Gly Arg Asn Gln Cys Pro
20 25 30

tgg tac tga ttacttaga ttcaacctaa ggggtccagcc actgactaag 203
Trp Tyr *
35

gccaaggcca tttttccata cctgggaggg tagagattca gggttgtggg taagtgggca 263
ctaaacatgg atttgcaagg gaaaacgaca gggcatcgag cttaaattga atttacctga 323
aattctgaaa tgtacttgta tgaagaaact gttatctgaa acctaaacta aatgggcatc 383
ctgoccttttg tctggtgaga aatgaaagt atctacaata agtgtcaaag caacaaggcc 443
cctctggata tgtctaggcc aggatgagga tactaagtgc cttcaaagcg agagggagggc 503
aggccaagaa cactgcccta ctgaaaggca ggcttgccg gctagggcct ccaaggccct 563
gatccctgag gcaccacagc cacaacttgt gtaggcctgg cccaggctcag tgaatagggt 623
ctaggcagtg gttctcaacc ttctaatgc tgcaaccctt caatacagtt tctcctggtg 683
tagtaatccc caaccataaa attattttca ttgcgacttc ataaactggac ttttgctact 743
gttatgaatc ataagtataa tatttttttg agctagaggt ttaccaaggg ggttggtgagc 803
cataggttga aaaccattgt tctaggaata gctccagggg tggtttctga ggcccccgca 863
aggtgggagc tatggggcag ggttggtatc tctccaagag cccccaacag gatatatata 923
tatatatata tatatatata tatatatata tatatatata tactttgata gcatcccatg 983
gaacgactgt ctctgatac taaagggagc ttggaagaaa ccaaggctga gagaagttgt 1043
agagtgggaa ggtaggcgaa gggattgagg tgacacagtg atagcccctt caggggtgggg 1103
tctaccnag acacagata aaggccttag gatgggagat tactctggct gctcagaggg 1163
gaacacagg acacagcacc aataaaatct ctttcttttc aaaaaaaaaa aaaaaaaaaa 1223
aaaaagcggn cc 1235

<210> 14
<211> 633
<212> DNA
<213> Rattus norvegicus

<220>
<221> CDS
<222> (359)...(631)

<400> 14
tctagcgaac cccttcgatt ttattagctc ttgcttctcc attcctcata atttatgaat 60
tatacagcct tcgcttgaat acgcgtctga agttatgctt tgtgttggtg tgggtttttt 120
tttttttttc ttttcttttt ttttgagct ggggaccgaa cccagggcct tgttgctcta 180
ccactgagct aaatcccca ccctgttgt gtgttttaa taagtctctt actgtccatt 240
ttgtaattag tgttggtacc ttgtaataat agacatcata caaagtttcc tcttttttgt 300
gccagtgtg agaacatgag aaacatttaa tgagtatttg tttgttaaata aatattta 358
taa cgg cta gaa tgg cag aca cac atg gta gca cat gat ggt gat ttt 406
* Arg Leu Glu Trp Gln Thr His Met Val Ala His Asp Gly Asp Phe
1 5 10 15

cgg ggg cct ttt gtt tgc tca gag ctg gta atc tct gcc ggt tgg ttt 454
Arg Gly Pro Phe Val Cys Ser Glu Leu Val Ile Ser Ala Gly Trp Phe
20 25 30

gct ttg cct ggt ctg gga cta acc tca cat ttt ctc act ctt gct ttc 502
Ala Leu Pro Gly Leu Gly Leu Thr Ser His Phe Leu Thr Leu Ala Phe

GenBank accession number: U00180.1 (Rattus norvegicus genome)

35	40	45	
cga gag att agt cat cct tcc tgt cct act ggg ctc tcg ata gcg ctc	550		
Arg Glu Ile Ser His Pro Ser Cys Pro Thr Gly Leu Ser Ile Ala Leu			
50 55 60			
atc agc ata ctg cat ttc aat ccc agc gaa ggg gtt cgc cga agg ggt	598		
Ile Ser Ile Leu His Phe Asn Pro Ser Glu Gly Val Arg Arg Arg Gly			
65 70 75			
tcg cta ggc cag tgt gat gga tat ctg cag aat tc	633		
Ser Leu Gly Gln Cys Asp Gly Tyr Leu Gln Asn			
80 85 90			

<210> 15
 <211> 607
 <212> DNA
 <213> Rattus norvegicus

<220>
 <221> CDS
 <222> (203)...(451)
 <221> misc_feature
 <222> (1)...(607)
 <223> n = A,T,C or G

<400> 15	
tctagcgaac cccttcgcct ttctccaaag ccttcccggtt tccctottgac agctacgggc	60
tgaggcagcc attcctgcag cagcgcctcg cgggtgaagg gccgaactga cgctcctag	120
atctgtctcg gctgaattac tctcaccgt ttccattctg tgtgcaccag aaatctgaga	180
tccaggagta tcaacagcaa ag atg tct aat gag cca ccc cct cct tat cca	232
Met Ser Asn Glu Pro Pro Pro Pro Tyr Pro	
1 5 10	

gga ggg cct aca gcc cca cta ctg gag gaa aaa agt gga gcc cca cat	280
Gly Gly Pro Thr Ala Pro Leu Leu Glu Glu Lys Ser Gly Ala Pro His	
15 20 25	

acc cca ggc cga acc ttt cca gct gtg atg cag cca cca cca ggc atg	328
Thr Pro Gly Arg Thr Phe Pro Ala Val Met Gln Pro Pro Pro Gly Met	
30 35 40	

cca ctg ccc tct gtt gac att gcc ccc ccg ccc tat gag ccg cct ggc	376
Pro Leu Pro Ser Val Asp Ile Ala Pro Pro Pro Tyr Glu Pro Pro Gly	
45 50 55	

cat cca ggg cct aag cct ggt ttw atg ccc ccc acn tta cca cac att	424
His Pro Gly Pro Lys Pro Gly Xaa Met Pro Pro Thr Leu Pro His Ile	
60 65 70	

cna ana acc ttn ntn tgt aaa agt taa ataanaangg agggattcga	471
Xaa Xaa Thr Xaa Xaa Cys Lys Ser *	
75 80	

nccccctnca acnggtttca agccaattty mtaaccattt tggttttttc wtttaaaaaa	531
---	-----

1
 2
 3
 4
 5
 6
 7
 8
 9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
 24
 25
 26
 27
 28
 29
 30
 31
 32
 33
 34
 35
 36
 37
 38
 39
 40
 41
 42
 43
 44
 45
 46
 47
 48
 49
 50
 51
 52
 53
 54
 55
 56
 57
 58
 59
 60
 61
 62
 63
 64
 65
 66
 67
 68
 69
 70
 71
 72
 73
 74
 75
 76
 77
 78
 79
 80
 81
 82
 83
 84
 85
 86
 87
 88
 89
 90
 91
 92
 93
 94
 95
 96
 97
 98
 99
 100

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaag gggaaaaaaaa aaaaaaaaaa 591
 aaaaaagggg ggcccc 607

<210> 16
 <211> 1456
 <212> DNA
 <213> Rattus norvegicus

<220>
 <221> CDS
 <222> (36)...(1424)

<221> misc_feature
 <222> (1)...(1456)
 <223> n = A,T,C or G

<400> 16
 tctagcgaac cccttcgcaa agtcctaagc cttac atg aga aaa ttt aag aca 53
 Met Arg Lys Phe Lys Thr
 1 5

ccc tta atg att gcg gaa gaa aaa tac aga caa caa agg gaa gag ctt 101
 Pro Leu Met Ile Ala Glu Glu Lys Tyr Arg Gln Gln Arg Glu Glu Leu
 10 15 20

gag aaa cag aga cgg gag agt tct tgc cat agc atc atc aaa aca gaa 149
 Glu Lys Gln Arg Arg Glu Ser Ser Cys His Ser Ile Ile Lys Thr Glu
 25 30 35

acc cag cac cgc agc tta tca gag aaa gag aaa gaa aca gag tta caa 197
 Thr Gln His Arg Ser Leu Ser Glu Lys Glu Lys Glu Thr Glu Leu Gln
 40 45 50

aaa gca gct gag gca atg tcc act ccc aga aag gat tca gac ttc act 245
 Lys Ala Ala Glu Ala Met Ser Thr Pro Arg Lys Asp Ser Asp Phe Thr
 55 60 65 70

agg gca cag ccc aac ctg gaa cct aaa agc aag gct gtg atc gcc agt 293
 Arg Ala Gln Pro Asn Leu Glu Pro Lys Ser Lys Ala Val Ile Ala Ser
 75 80 85

gaa tgc tct gaa agc cag ctc tct aca gct tcc gca ttg aca gtc gct 341
 Glu Cys Ser Glu Ser Gln Leu Ser Thr Ala Ser Ala Leu Thr Val Ala
 90 95 100

acc gag agg ctc cag cat gtt cta gcc gct tca gac gat aag ctt acc 389
 Thr Glu Arg Leu Gln His Val Leu Ala Ala Ser Asp Asp Lys Leu Thr
 105 110 115

ctg cga cgg gaa ggc aca cag aac tca agt gac acc cta caa tcg aaa 437
 Leu Arg Arg Glu Gly Thr Gln Asn Ser Ser Asp Thr Leu Gln Ser Lys
 120 125 130

aca gct tgt gag att aac cag agt cac aag gaa tgt agg aca gag caa 485
 Thr Ala Cys Glu Ile Asn Gln Ser His Lys Glu Cys Arg Thr Glu Gln
 135 140 145 150

591
607
101
149
197
245
293
341
389
437
485

aca ttt gag caa cac gtg gag aag ttg ccc ttc ccc caa acc aaa ccc	533
Thr Phe Glu Gln His Val Glu Lys Leu Pro Phe Pro Gln Thr Lys Pro	
155 160 165	
att tcc ccg agt ttc aaa gtg aaa act atc agg ctt cca gct cta gat	581
Ile Ser Pro Ser Phe Lys Val Lys Thr Ile Arg Leu Pro Ala Leu Asp	
170 175 180	
cat acg ctg act gaa aca gat ctc agt tct gaa cgc cgc gta aag caa	629
His Thr Leu Thr Glu Thr Asp Leu Ser Ser Glu Arg Arg Val Lys Gln	
185 190 195	
tcc gaa att gac gtt caa acc agt act aaa gaa atg aat aag gaa att	677
Ser Glu Ile Asp Val Gln Thr Ser Thr Lys Glu Met Asn Lys Glu Ile	
200 205 210	
aag aaa acc gaa gtg agc aca cag tgt gat aat aag caa tct gtg gct	725
Lys Lys Thr Glu Val Ser Thr Gln Cys Asp Asn Lys Gln Ser Val Ala	
215 220 225 230	
gaa aaa tat ttt caa tta cct aaa aca gag aaa cgg gtg acg gta caa	773
Glu Lys Tyr Phe Gln Leu Pro Lys Thr Glu Lys Arg Val Thr Val Gln	
235 240 245	
atg ccc aaa gac tat gca gcg aaa agt cat caa agc aaa ctc caa aca	821
Met Pro Lys Asp Tyr Ala Ala Lys Ser His Gln Ser Lys Leu Gln Thr	
250 255 260	
gtt ccc aag aag cat gga gga ttg ggg gag ttt gac aga ggg aat gtc	869
Val Pro Lys Lys His Gly Gly Leu Gly Glu Phe Asp Arg Gly Asn Val	
265 270 275	
ctg ggg agg gaa gga aaa aat cag gac tcc tcc atg agc agt aca aaa	917
Leu Gly Arg Glu Gly Lys Asn Gln Asp Ser Ser Met Ser Ser Thr Lys	
280 285 290	
gaa agc agg gta ata gtt gaa aga aag caa gaa cat cta cag gac cag	965
Glu Ser Arg Val Ile Val Glu Arg Lys Gln Glu His Leu Gln Asp Gln	
295 300 305 310	
agc gta cca agg tta gtc caa caa aag att atc ggt gaa agc ctg gac	1013
Ser Val Pro Arg Leu Val Gln Gln Lys Ile Ile Gly Glu Ser Leu Asp	
315 320 325	
tca cgg gtt cag aat ttt cag cag aca caa aca caa act tct agg att	1061
Ser Arg Val Gln Asn Phe Gln Gln Thr Gln Thr Gln Thr Ser Arg Ile	
330 335 340	
gag cat aaa gaa ctg tcc caa cct tac agt gag aaa aaa tgt ctt aga	1109
Glu His Lys Glu Leu Ser Gln Pro Tyr Ser Glu Lys Lys Cys Leu Arg	
345 350 355	
gac aag gac aaa caa caa aaa cag gtc tcc tct aac act gac gat tca	1157
Asp Lys Asp Lys Gln Gln Lys Gln Val Ser Ser Asn Thr Asp Asp Ser	
360 365 370	
aag caa gag ata aca caa aaa caa tct tca ttt tcc tct gtg aga gaa	1205

1205
 1109
 1061
 1013
 965
 917
 869
 821
 773
 725
 677
 629
 581
 533

Lys Gln Glu Ile Thr Gln Lys Gln Ser Ser Phe Ser Ser Val Arg Glu
 375 380 385 390
 tcc cag cag gat gga gaa aaa tgt gcc ata aaa ata ttg gaa ttc ttg 1253
 Ser Gln Gln Asp Gly Glu Lys Cys Ala Ile Lys Ile Leu Glu Phe Leu
 395 400 405
 aga aaa cgt gaa gaa cta cag cag att ttg tct agg gta aaa cag ttt 1301
 Arg Lys Arg Glu Glu Leu Gln Gln Ile Leu Ser Arg Val Lys Gln Phe
 410 415 420
 gaa gca gat tca aat aaa agt ggc ctt aaa aca ttt cag aca ctg tta 1349
 Glu Ala Asp Ser Asn Lys Ser Gly Leu Lys Thr Phe Gln Thr Leu Leu
 425 430 435
 aat att gct ccg gtg tgg ctg ata agt gag gag aaa aga gaa tat gga 1397
 Asn Ile Ala Pro Val Trp Leu Ile Ser Glu Glu Lys Arg Glu Tyr Gly
 440 445 450
 gtt cgt gtt gcc atg gag aat aat tag aaaaaataaa aaaaaaaaaa 1444
 Val Arg Val Ala Met Glu Asn Asn *
 455 460
 aaaagcggcg nc 1456
 <210> 17
 <400> 17
 000
 <210> 18
 <211> 2023
 <212> DNA
 <213> Rattus norvegicus
 <220>
 <221> CDS
 <222> (243)...(755)
 <221> misc_feature
 <222> (1)...(2023)
 <223> n = A,T,C or G
 <400> 18
 gaattgtaat acgactcact atagggcgaa ttggggccct agcgaacccc ttcgacaaca 60
 tcaaagagga cagatctaac cctagactga ggccggaggc ctggaccaat tacctgaggg 120
 atgtccacag agcctttgca ctgctgaaca gtcaccctga tccaaaccaa gtaaattgga 180
 ctccaactgc accaagcagt ggccctccag tcacctctgc tgagctcttg gtgcgggcag 240
 ag atg gct tct gca gag tca ggt gaa gac cca agt cat gtg gtt ggg 287
 Met Ala Ser Ala Glu Ser Gly Glu Asp Pro Ser His Val Val Gly
 1 5 10 15
 gaa acg cct cct ttg acc ttg cca gcc aac ctc caa acc ctg cat ccg 335
 Glu Thr Pro Pro Leu Thr Leu Pro Ala Asn Leu Gln Thr Leu His Pro
 20 25 30
 aac aga cca acg ttg agt cca gag aga aaa ctt gaa tgg aat aac gac 383

1
 2
 3
 4
 5
 6
 7
 8
 9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
 24
 25
 26
 27
 28
 29
 30
 31
 32
 33
 34
 35
 36
 37
 38
 39
 40
 41
 42
 43
 44
 45
 46
 47
 48
 49
 50
 51
 52
 53
 54
 55
 56
 57
 58
 59
 60
 61
 62
 63
 64
 65
 66
 67
 68
 69
 70
 71
 72
 73
 74
 75
 76
 77
 78
 79
 80
 81
 82
 83
 84
 85
 86
 87
 88
 89
 90
 91
 92
 93
 94
 95
 96
 97
 98
 99
 100

Asn Arg Pro Thr Leu Ser Pro Glu Arg Lys Leu Glu Trp Asn Asn Asp
 35 40 45

att cca gaa gtg aat cgt ttg aat tct gaa cac tgg aga aaa act gag 431
 Ile Pro Glu Val Asn Arg Leu Asn Ser Glu His Trp Arg Lys Thr Glu
 50 55 60

gag cag cca gga cgg ggg gag gtg ctt ctc ccc gaa ggt gac gtc agt 479
 Glu Gln Pro Gly Arg Gly Glu Val Leu Leu Pro Glu Gly Asp Val Ser
 65 70 75

ggc aac ggt atg aca gag ctg ttg ccc atc ggt cgg cac caa caa aag 527
 Gly Asn Gly Met Thr Glu Leu Leu Pro Ile Gly Arg His Gln Gln Lys
 80 85 90 95

cgt ccc cac gat gcg ggg cca gag gac cat gct ttt gaa gat caa ttg 575
 Arg Pro His Asp Ala Gly Pro Glu Asp His Ala Phe Glu Asp Gln Leu
 100 105 110

cat cct ctc gtc cac tct gac aga act ccc gtt cat cgg gtg ttc gat 623
 His Pro Leu Val His Ser Asp Arg Thr Pro Val His Arg Val Phe Asp
 115 120 125

gtg tcc cac ttg gag cag cct gtt cac tcc agc cac gtg gaa gga atg 671
 Val Ser His Leu Glu Gln Pro Val His Ser Ser His Val Glu Gly Met
 130 135 140

ttg gcc aag atg gag ggg atg gca caa agg agt ggg cac caa gtc tcg 719
 Leu Ala Lys Met Glu Gly Met Ala Gln Arg Ser Gly His Gln Val Ser
 145 150 155

aag gca gcg cct cct ctc cag tca ctt ctt gct tag attacatggt 765
 Lys Ala Ala Pro Pro Leu Gln Ser Leu Leu Ala *
 160 165 170

gcctaacaat gtttctttcc atgttttgat tagtaaaacta actcgtggtg gcaatcatga 825
 ctcccaacct tctgagctcc cccgggtacg cttgcacogt agacgctcat gtgcgcaccg 885
 tgccgggtgat gctcacacac agactcattg taattcaccg ttttaccgag aagggggggg 945
 gggcgaatgt tctgtgttga tgctttgttt ttggtactaa aacagnatta tcttttgaat 1005
 attgtaggga catgagtata taaagtctat ccagtcaaaa tggctagaat tgngcctttg 1065
 taagttttta aaacttgatg cccacatgag totgtgagca catntttccc gcctgcctaa 1125
 cggagtttga atttgtttct aacctgtga attcttcaac atcatcacct ttggttcagt 1185
 gattttgcac tttagatttg gatactgtgt ctgcttggtt ggtagtggtta gtatttttct 1245
 tttaaacagg cttatcagag ttgcacactt tgtcctaggc agggcaaagg aatagacgcc 1305
 cagcaaggac acacagtata ggtaacatac tgcttatcgt acgcttttcc caciaagcat 1365
 tgcattgtgt tttacctcga cgtgctaaag ttgattagca gaaaggcatg actcacaatt 1425
 ttggtggtta aaaataaacc ctgagggagc aagcaataac taaaacaaga ttgagctgct 1485
 ctctctgtgc ttactaaata gatgctcgcc ctgctaatagc ttgcoctctt gaaagaagaa 1545
 acaggatgca cactgcttta tttcaatctt cctctttttt tottggtttc accagtgagc 1605
 gtaagcattg gaaaaatatg tgtagtctta tctttctata agacgatttt aataaactaa 1665
 aatcacaaat gctgtaaagt ttgtgcgcac cagaatggag gctaaottca taaacattgt 1725
 gctgtgcgaa tattcctaaa atgatcccca agctgtggtt ttctagaaga catagttcag 1785
 aaccgctttt gaaaaatctg tctcgtgag ctcactcagt ttctgtcgga ctttttagaga 1845
 cagtgaagg attacctcat tgagacgttt ccgtgtcctc ttcaactcca caggggtctt 1905
 acggtggctt tgtttttctt tctagactat tcaaacatgt agataagtta tatttttctt 1965
 taagtgttta aagtaaacac ttttcaaaaa aaaaaaaaaa aaaaaaaaaa gcggccgc 2023

1000 900 800 700 600 500 400 300 200 100 0

Year	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

Arg 1	Leu	Glu	Trp	Gln 5	Thr	His	Met	Val	Ala 10	His	Asp	Gly	Asp	Phe 15	Arg
Gly	Pro	Phe	Val	Cys	Ser	Glu	Leu	Val	Ile 25	Ser	Ala	Gly	Trp	Phe 30	Ala
Leu	Pro	Gly 35	Leu	Gly	Leu	Thr	Ser 40	His	Phe	Leu	Thr	Leu 45	Ala	Phe	Arg
Glu	Ile 50	Ser	His	Pro	Ser	Cys 55	Pro	Thr	Gly	Leu	Ser 60	Ile	Ala	Leu	Ile
Ser 65	Ile	Leu	His	Phe	Asn 70	Pro	Ser	Glu	Gly	Val 75	Arg	Arg	Arg	Gly	Ser 80
Leu	Gly	Gln	Cys	Asp 85	Gly	Tyr	Leu	Gln	Asn 90						

```
<220>  
<221> CDS  
<222> (30)...(809)  
  
<221> sig_peptide  
<222> (30)...(107)
```

<400>	20
tctagcgaac cccttcggggt gtttcatc atg gag ctg tgc cgg cgg att tgt	53
Met Glu Leu Ser Arg Arg Ile Cys	-25 -20
ctc gtc cga ctg tgg ctg ttg cta ctg tca ttc tta ctg gcc ttc agc	101
Leu Val Arg Leu Trp Leu Leu Leu Leu Ser Phe Leu Leu Gly Phe Ser	-15 -10 -5
gcg gga tct gcc ctc aac tgg cgg gaa caa gaa gcc aag gaa gta tgg	149
Ala Gly Ser Ala Leu Asn Trp Arg Glu Gln Glu Gly Lys Glu Val Trp	1 5 10
gat tac gtg act gtt cga gag gat gca cgc atg ttc tgg tgg ctc tac	197
Asp Tyr Val Thr Val Arg Glu Asp Ala Arg Met Phe Trp Trp Leu Tyr	15 20 25 30
tat gcc acc aac cct tgc aag aac ttc tca gag ctg cct ctg gtc atg	245
Tyr Ala Thr Asn Pro Cys Lys Asn Phe Ser Glu Leu Pro Leu Val Met	35 40 45
tgg ctt cag ggt ggt cca ggt ggt tct agc act gga ttt gga aac ttt	293
Trp Leu Gln Gly Gly Pro Gly Gly Ser Ser Thr Gly Phe Gly Asn Phe	50 55 60
gag gaa atc gcc cct ctt gac acc cga ctc aag cca cgg aac act acc	341

[illegible]

gacggggttaa	acttctataa	catcttaact	aaaagcacc	cgcacacctc	tatggagtcg	879
agcctcgagt	tcttcggag	ccccttagtt	cgtctctgtc	agcgccacgt	gagacacct	939
caaggagacg	ccttaagtca	gctcatgaac	gggcccatca	aaaagaagct	caaaattatc	999
cctgacgacg	tctcctggg	agcccagtcg	tctccgtct	tcataagcat	ggaagaggac	1059
ttcatgaagc	ctgtcatcga	catcgtggat	acgttgctgg	aactcggggt	caatgtgact	1119
gtgtacaatg	ggcagctgga	tctcattgtg	gacaccatag	gtcaggagtc	ctgggttcag	1179
aagctgaagt	ggccacagct	gtccagattc	aatcagctaa	aatggaaggc	cctgtacacc	1239
gacctaagt	cttcagaaac	atctgcattt	gtcaagtcct	atgagaacct	agcgttctac	1299
tgatcctaa	aggcgggtca	catggttcct	gctgaccaag	gggacatggc	tctgaagatg	1359
atgaggctgg	ttactcagca	ggagtagctg	agctgagctg	gccctggagg	cctggagggc	1419
cctggagtag	ggcccagatg	gcaggtgcta	atgtctatcc	cggcgctct	tcttcccgac	1479
tctaccattg	gtcgtaaact	caggagcccc	tgccattctc	cgtacacaaa	gactgtggct	1539
tccgtgtcta	ctcagaaatc	agttctactt	cgtaaacagt	ggttaaaacc	agactcattt	1599
aatcagagtg	aaggattgca	gtccattggc	ttcttagcac	agaagcagct	gataacacaa	1659

gtaaacccca gcccttgaga ggtagaagca agaggatcag aggttcaagc gcatcctcgg 1719
ctccatcaca agttcaaaag ccgcctgcac caaatgggag tccttgtctc aaaaaaaaaa 1779
aaaaaaaaaa aaaaagcggc cgc 1802

<210> 21
<211> 82
<212> PRT
<213> Rattus norvegicus

<220>
<221> VARIANT
<222> (1)...(82)
<223> Xaa = Any Amino Acid

<400> 21
Met Ser Asn Glu Pro Pro Pro Pro Tyr Pro Gly Gly Pro Thr Ala Pro
1 5 10 15
Leu Leu Glu Glu Lys Ser Gly Ala Pro His Thr Pro Gly Arg Thr Phe
20 25 30
Pro Ala Val Met Gln Pro Pro Pro Gly Met Pro Leu Pro Ser Val Asp
35 40 45
Ile Ala Pro Pro Pro Tyr Glu Pro Pro Gly His Pro Gly Pro Lys Pro
50 55 60
Gly Xaa Met Pro Pro Thr Leu Pro His Ile Xaa Xaa Thr Xaa Xaa Cys
65 70 75 80
Lys Ser

<210> 22
<211> 630
<212> DNA
<213> Rattus norvegicus

<220>
<221> misc_feature
<222> (1)...(630)
<223> n = A,T,C or G

<221> CDS
<222> (91)...(183)

<400> 22
tctagcgaac cccttcgcga aggggttcgc taggttgcgt ttgtggagaa aaatctgttc 60
tacctcaggg ctgtgagaac ggcactcctg atg tct gag aaa gag aaa caa gat 114
Met Ser Glu Lys Glu Lys Gln Asp
1 5
tgg ctg aag gat cct ccg ttc ctt cag aga cct ggg tgg aga gca tta 162
Trp Leu Lys Asp Pro Pro Phe Leu Gln Arg Pro Gly Trp Arg Ala Leu
10 15 20
ggg aca cga aga aca gag tag cggaagaaga gttcttaagt aataagttta 213
Gly Thr Arg Arg Thr Glu *
25 30
cctcctgact ggctcacatc actgccttac tctgtagaaa gcaggtcac tcacggattt 273
ccccctccca cccccccagc tggatcattt tttgactcag ggaaaataat taaattattg 333

tccaactggt	agtgttgatc	ggtaacagca	gaaaggcaga	aagttcctga	taatctcaat	393
attatctttt	caaaagtatt	ttcctgggaat	gttggtttgct	ttggcattac	aaagttctgt	453
actcttaaaa	atattttgac	ttgctgggca	tggaggtcac	acctttaatc	cagaggcagg	513
catggatcca	caggagttca	aggccgcctg	gctacaaaagc	gagttcaagg	gcagccaggg	573
ctacacagag	agacctgtgc	tctnaccnn	tnannaaaaa	acnaaaaagc	cggccgc	630

<210> 23
 <211> 445
 <212> DNA
 <213> Rattus norvegicus

<220>
 <221> CDS
 <222> (113)...(232)

<400> 23	
tctagcgaac	cccttcggta
tagtcttttag	gtagtggcctt
agtcacctgga	agctctgggtt
gcttggcatt	tcaacgtgct
tcttaaataa	ctgttttatt
agtcagtaca	ag atg ctt
	Met Leu
	1

tgt ata tca gat ctg aaa tat ctt aaa att atc act tgc att gta aat	166
Cys Ile Ser Asp Leu Lys Tyr Leu Lys Ile Ile Thr Cys Ile Val Asn	
5 10 15	

tac tat tcc ttt cgc aga aat aat gaa tgc ttc aag aaa aaa agc	214
Tyr Tyr Ser Phe Arg Arg Asn Asn Glu Cys Phe Lys Lys Lys Ser	
20 25 30	

tgt ttg tat tgg gtt taa aacgtttcca aacaccaatt attctttact	262
Cys Leu Tyr Trp Val *	
35	

taagtcatcc	gatctagtta	ttaaattatt	attactgcct	tcacactatc	aaagatggta	322
aatatctgat	agaatcatat	tcaaaatact	tctgtttcac	atttcttgag	aaagtactga	382
ctgtctgagt	tctttctcaa	gaaatgtgaa	acagaagtat	tttgaatcga	aggggttcgc	442
tag						445

<210> 24
 <211> 273
 <212> DNA
 <213> Rattus norvegicus

<220>
 <221> misc_feature
 <222> (1)...(273)
 <223> n = A,T,C or G

<400> 24						
tctagcgaac	cccttcggaa	gaactgtata	tttgtgcctt	gttctgcaag	ttaaaaagct	60
ggtccagaca	gtgtcataga	attaactttt	catttctgta	ttaatttttag	gactgcaaaa	120
atcccaaagc	tgtatactta	gattggattc	aataaaaaag	ttaagtttac	tnaanaaaaa	180
aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaanaaaaa	aaaaaaaaag	240
aaaaaaaaaa	ncggncnnaa	aaaaggnngc	cgc			273

<210> 25
 <211> 170

<212> PRT
<213> Rattus norvegicus

<400> 25

Met Ala Ser Ala Glu Ser Gly Glu Asp Pro Ser His Val Val Gly Glu
1 5 10 15
Thr Pro Pro Leu Thr Leu Pro Ala Asn Leu Gln Thr Leu His Pro Asn
20 25 30
Arg Pro Thr Leu Ser Pro Glu Arg Lys Leu Glu Trp Asn Asn Asp Ile
35 40 45
Pro Glu Val Asn Arg Leu Asn Ser Glu His Trp Arg Lys Thr Glu Glu
50 55 60
Gln Pro Gly Arg Gly Glu Val Leu Leu Pro Glu Gly Asp Val Ser Gly
65 70 75 80
Asn Gly Met Thr Glu Leu Leu Pro Ile Gly Arg His Gln Gln Lys Arg
85 90 95
Pro His Asp Ala Gly Pro Glu Asp His Ala Phe Glu Asp Gln Leu His
100 105 110
Pro Leu Val His Ser Asp Arg Thr Pro Val His Arg Val Phe Asp Val
115 120 125
Ser His Leu Glu Gln Pro Val His Ser Ser His Val Glu Gly Met Leu
130 135 140
Ala Lys Met Glu Gly Met Ala Gln Arg Ser Gly His Gln Val Ser Lys
145 150 155 160
Ala Ala Pro Pro Leu Gln Ser Leu Leu Ala
165 170

<210> 26

<211> 2077

<212> DNA

<213> Rattus norvegicus

<220>

<221> CDS

<222> (200)...(1825)

<400> 26

tctagcgaac cccttcgggg gaacccaagc ggcttcgccc aggcattcgc gggggcgccc 60
gcggtctggg tcccacctcc tctgctttcg cacccttgaa gttttggagc accaggaaaa 120
gagggcaagg aaggagaggg gaagcgaaag catatcctaa aacatttact taaaggagga 180
aagaaaaggg gtcgcagaa atg gct ggg gca att ata gaa aac atg agc acc 232
Met Ala Gly Ala Ile Ile Glu Asn Met Ser Thr
1 5 10
aag aag ctc tgc att gtt gga ggg att ctt ctg gtt ttc caa atc gtt 280
Lys Lys Leu Cys Ile Val Gly Gly Ile Leu Leu Val Phe Gln Ile Val
15 20 25
gcc ttt ctg gtg gga ggc ttg atc gct cca gca ccc aca acg gca gtg 328
Ala Phe Leu Val Gly Gly Leu Ile Ala Pro Ala Pro Thr Thr Ala Val
30 35 40
tcc tac gtg gca gca aaa tgt gtg gat gtc cgg aag aac cac cat aaa 376
Ser Tyr Val Ala Ala Lys Cys Val Asp Val Arg Lys Asn His His Lys
45 50 55
aca aga tgg ctg atg ccc tgg gga cca aac aag tgt aac aag atc aat 424

Thr 60	Arg	Trp	Leu	Met	Pro 65	Trp	Gly	Pro	Asn	Lys 70	Cys	Asn	Lys	Ile	Asn 75	
gac Asp	ttc Phe	gaa Glu	gaa Glu	gca Ala 80	att Ile	cca Pro	agg Arg	gaa Glu	att Ile 85	gaa Glu	gcg Ala	aat Asn	gac Asp	att Ile 90	gtg Val	472
ttt Phe	tct Ser	gta Val	cac His 95	att Ile	ccc Pro	ctc Leu	cct Pro	tct Ser 100	atg Met	gag Glu	atg Met	agc Ser	cca Pro 105	tgg Trp	ttc Phe	520
cag Gln	ttt Phe	atg Met 110	ctg Leu	ttt Phe	atc Ile	ctg Leu	cag Gln 115	ata Ile	gac Asp	att Ile	gct Ala	ttc Phe 120	aag Lys	cta Leu	aac Asn	568
aac Asn	caa Gln 125	atc Ile	aga Arg	gaa Glu	aat Asn	gca Ala 130	gaa Glu	gtt Val	tcc Ser	atg Met	gat Asp 135	gtt Val	tcc Ser	ctg Leu	ggt Gly	616
tac Tyr 140	cgt Arg	gat Asp	gat Asp	atg Met	ttt Phe 145	tct Ser	gag Glu	tgg Trp	act Thr	gaa Glu 150	atg Met	gcg Ala	cac His	gaa Glu	aga Arg 155	664
gta Val	cca Pro	cgt Arg	aaa Lys 160	ctc Leu	aga Arg	tgc Cys	act Thr	ttc Phe	aca Thr 165	tcc Ser	ccc Pro	aag Lys	acc Thr	cca Pro 170	gag Glu	712
cat His	gaa Glu	ggg Gly	cgt Arg 175	cat His	tat Tyr	gaa Glu	tgt Cys	gat Asp 180	gtc Val	ctt Leu	cct Pro	ttc Phe 185	atg Met	gaa Glu	att Ile	760
ggg Gly	tca Ser	gtg Val 190	gct Ala	cat His	aag Lys	tat Tyr	tac Tyr 195	ctt Leu	cta Leu	aat Asn	atc Ile	cgg Arg 200	cta Leu	cct Pro	gta Val	808
aat Asn	gag Glu 205	aag Lys	aag Lys	aaa Lys	atc Ile	aat Asn 210	gtt Val	gga Gly	att Ile	ggg Gly 215	gaa Glu	ata Ile	aag Lys	gac Asp	att Ile	856
cgg Arg 220	ttg Leu	gtg Val	gga Gly	atc Ile	cac His 225	caa Gln	aat Asn	gga Gly	ggg Gly	ttc Phe 230	act Thr	aag Lys	gta Val	tgg Trp	ttt Phe 235	904
gct Ala	atg Met	aag Lys	acc Thr 240	ttc Phe	ctc Leu	aca Thr	ccc Pro	agc Ser	atc Ile 245	ttc Phe	atc Ile	att Ile	atg Met	gtg Val 250	tgg Trp	952
tat Tyr	tgg Trp	aga Arg	agg Arg 255	atc Ile	acc Thr	atg Met	atg Met	tcc Ser 260	cga Arg	cct Pro	cca Pro	gtg Val	ctt Leu 265	ctg Leu	gaa Glu	1000
aaa Lys	gtc Val	atc Ile 270	ttt Phe	gcc Ala	ctt Leu	ggg Gly	att Ile 275	tcc Ser	atg Met	acc Thr	ttt Phe 280	atc Ile	aat Asn	atc Ile	cct Pro	1048
gtg Val	gaa Glu	tgg Trp	ttt Phe	tcc Ser	att Ile	gga Gly	ttt Phe	gat Asp	tgg Trp	acc Thr	tgg Trp	atg Met	ctg Leu	tta Leu	ttt Phe	1096

285	290	295	
ggt gac ata cga cag ggc atc ttc tat gca atg ctt ctt tcc ttc tgg			1144
Gly Asp Ile Arg Gln Gly Ile Phe Tyr Ala Met Leu Leu Ser Phe Trp			
300	305	310	315
atc atc ttc tgt ggc gag cac atg atg gat caa cat gag cgg aat cac			1192
Ile Ile Phe Cys Gly Glu His Met Met Asp Gln His Glu Arg Asn His			
	320	325	330
att gca ggg tat tgg aag caa gtt gga cca att gct gtt ggc tct ttc			1240
Ile Ala Gly Tyr Trp Lys Gln Val Gly Pro Ile Ala Val Gly Ser Phe			
	335	340	345
tgc ctc ttc ata ttt gac atg tgt gag aga gga gtg caa ctc aca aat			1288
Cys Leu Phe Ile Phe Asp Met Cys Glu Arg Gly Val Gln Leu Thr Asn			
	350	355	360
cct ttc tac agt atc tgg act aca gat gtt gga aca gaa ctg gct atg			1336
Pro Phe Tyr Ser Ile Trp Thr Thr Asp Val Gly Thr Glu Leu Ala Met			
	365	370	375
gct ttc atc att gtg gca ggt atc tgc ctc tgc ctc tac ttc ctg ttt			1384
Ala Phe Ile Ile Val Ala Gly Ile Cys Leu Cys Leu Tyr Phe Leu Phe			
	380	385	390
ctg tgt ttc atg gta ttt caa gta ttc aga aac atc agt ggg aaa cag			1432
Leu Cys Phe Met Val Phe Gln Val Phe Arg Asn Ile Ser Gly Lys Gln			
	400	405	410
tct agc ctc cca gcc atg agc aaa gtc cgg agg ctg cac tat gag ggt			1480
Ser Ser Leu Pro Ala Met Ser Lys Val Arg Arg Leu His Tyr Glu Gly			
	415	420	425
ctg att ttc agg ttc aag ttc ctc atg ctg atc acc ttg gct tgt gct			1528
Leu Ile Phe Arg Phe Lys Phe Leu Met Leu Ile Thr Leu Ala Cys Ala			
	430	435	440
gcc atg act gtt atc ttc ttc att gtt agt cag gtg aca gaa ggc cat			1576
Ala Met Thr Val Ile Phe Phe Ile Val Ser Gln Val Thr Glu Gly His			
	445	450	455
tgg aaa tgg ggt ggg gtc aca gtt caa gtg agc agt gct ttc ttc act			1624
Trp Lys Trp Gly Gly Val Thr Val Gln Val Ser Ser Ala Phe Phe Thr			
	460	465	470
gga atc tat ggg atg tgg aac ctg tat gtc ttt gct ttg atg ttc ttg			1672
Gly Ile Tyr Gly Met Trp Asn Leu Tyr Val Phe Ala Leu Met Phe Leu			
	480	485	490
tat gca cca tcc cat aag aac tat ggg gaa gac cag tct aat ggt gac			1720
Tyr Ala Pro Ser His Lys Asn Tyr Gly Glu Asp Gln Ser Asn Gly Asp			
	495	500	505
ctg ggt gtc cac agc ggg gaa gaa ctg cag ctc act acc aca atc acc			1768
Leu Gly Val His Ser Gly Glu Glu Leu Gln Leu Thr Thr Thr Ile Thr			
	510	515	520

1144
 1192
 1240
 1288
 1336
 1384
 1432
 1480
 1528
 1576
 1624
 1672
 1720
 1768

<210> 28
 <211> 755
 <212> DNA
 <213> Rattus norvegicus

<220>
 <221> misc_feature
 <222> (1)...(755)
 <223> n = A,T,C or G

<221> CDS
 <222> (30)...(122)

<400> 28
 tctaacgaac cccttcggag cgatggaat gag aaa ggc cca gaa tgt gtt aag 53
 Glu Lys Gly Pro Glu Cys Val Lys
 1 5
 tct gtg cag ggg aag tgt cct gag ggg agg gtc ttt ggg agg gtc gaa 101
 Ser Val Gln Gly Lys Cys Pro Glu Gly Arg Val Phe Gly Arg Val Glu
 10 15 20
 ggc cag gat ggc aaa gtg aag gtagctgagg ttgcagtctt ggggtgccac 152
 Gly Gln Asp Gly Lys Val Lys
 25 30
 tgctgtgcat ctgtctgggt atctaccct actttgggct gacaactgca gggttgggtg 212
 taggctgtct cactgcatgc cgggaagctg gagaagctcc acgggaacat tgagggccat 272
 ggctttgaga cactgcagag catccttgggt ctctgtaacc acgtcaccta accctgacaa 332
 ttccagaccc ttcttcatt gtccttgtga accatttggg cttatctttc cctcttagtc 392
 gcaagggtca aaccaagggt cagtcaagta gatgactgtc acottgggcc tccccagact 452
 ctgctgccgg ggttgggaga ccaaagtaga aactgccact acaaggcccc aggatgaggt 512
 ctctgttctg tggacctgct ccccagatac aggcctcaga cccataggac gtggccggtg 572
 ctcagggaca cccaatcccc ggccctcact catcgagtac tgacttcttt ctctagtgcc 632
 ttgggggtct ccatecttca gttatggtat gaagaatcta tgcaaactgt ataagcttct 692
 gctcaccaat aaacgcttta tttaaagctt annnnnnnnn nnnnnnnnn nnaagcggn 752
 cgc 755

<210> 29
 <211> 1310
 <212> DNA
 <213> Rattus norvegicus

<220>
 <221> misc_feature
 <222> (1)...(1310)
 <223> n = A,T,C or G

<221> CDS
 <222> (89)...(391)

<400> 29
 tctagcgaac cccttcgcag aaaccctaaag ttacagacca gaccctaccc aacatccagt 60
 cagcaatcca gctggagaaa cgcttgag atg aca agg gac ttt cag aag caa 112
 Met Thr Arg Asp Phe Gln Lys Gln

5

aat gac atg ggc ctt caa cct ctg cct gta ggg aag gac gca cac agt 208
Asn Asp Met Gly Leu Gln Pro Leu Pro Val Gly Lys Asp Ala His Ser
25 30 35 40

gca cca gga gtg aca gtc tct ggg aaa aac cac aaa aga act cag gca 256
Ala Pro Gly Val Thr Val Ser Gly Lys Asn His Lys Arg Thr Gln Ala
45 50 55

cct gac aag aaa cag aga att gat gtt tgt cta gaa agc cag gac ttt 304
Pro Asp Lys Lys Gln Arg Ile Asp Val Cys Leu Glu Ser Gln Asp Phe
60 65 70

cta atg aag aca aat act tcc aag gag tta aaa atg gca atg gag agg 352
Leu Met Lys Thr Asn Thr Ser Lys Glu Leu Lys Met Ala Met Glu Arg
75 80 85

```
tcc ttt aat cca gtc aac ctt tcc ctg act gtg gtg taa aagaaaatga      401
Ser Phe Asn Pro Val Asn Leu Ser Leu Thr Val Val *
          90                      95                      100
```

ggagcgccctt	ctctccatct	tcccctcctt	cttctccttc	caattgcgtc	atctgaaatt	461
gaatttcctc	tctcctcca	ccacctataa	tgtgtgct	gaaaaaaatg	agtttcctcc	521
ctcatcacc	acagagaagt	caagggtga	acttgagagc	ctcccaacc	tgcctcttc	581
tccaccacca	ggagatgaga	aatctgatca	ggaatgtcta	ccaacatccc	tacctctcc	641
cctcccaaca	gtcccatccc	aaccagcaca	tcttctttcc	tctctgttc	tagaacatca	701
cagtgaagca	tttttacaac	agtattcccg	aaaagaaacc	ttggactctc	atcggttca	761
ctcacaggct	aaaatcctaa	caggaaaatc	accaccccca	acactcccca	aacccaaact	821
tcccgagaga	atcaaagcta	agatgagcca	ggattcacca	agcgggtgaat	tggaaagatc	881
tctgtcagat	gtggaatta	aaactaccct	ctcaaaggat	cagaaaagtt	cgctggtggc	941
agaaagccgt	gagcacacag	aggccaagca	agaagtattc	cgaaaaagcc	ttggaagaaa	1001
acagctgtcc	attagctctg	caaactccct	ctctcagaca	gttcagaaa	tcccagcacc	1061
caaggaaaaa	cagacagcac	cccttgttaa	atctcactca	tcccatcag	gttcagaaca	1121
acaaagtctt	aagccttaca	tgagaaaatt	taagacaccc	ttaatgattg	cggaagaaaa	1181
atacagaaa	caaagggaag	agcttgagaa	acagagacgg	gagagttctt	gccatagcat	1241
catcaaaaaa	gaaaccagc	accgcagctt	atcaaanntt	aaaaaaaaaa	aaannnagc	1301
ggnccccc						1310

```
<210> 31
<211> 774
<212> DNA
<213> Rattus norvegicus
```

```
<220>
<221> misc_feature
<222> (1)...(774)
<223> n = A,T,C or G
```

```
<221> CDS
<222> (297) ... (494)
```

<400> 31

tctagegaac cccttcgctt tttttttttt tttttttttt ttttcccccc tttcctatatt	60
attaatgggg ggaagtatgt ttatgtggga tttatccact tcttttagat tctcctacct	120
gttgatctgt aattattcct agtagtctct tagagttctt agaagcatgc tgttaccgct	180
aatatttcct tttggtttgg atcttactta aacatattgt ttccttactc tctttttcat	240
cccagcttgt ctaactgaaa ggccagaccc aacttgatct atccctttaa aacttc atg	299

Met
1

tct tgg cct gtt gat ttc tct gct cca ggt gtc acc gaa ggg gtt cgc	347
Ser Trp Pro Val Asp Phe Ser Ala Pro Gly Val Thr Glu Gly Val Arg	
5 10 15	

cta gcg aac ccc ttc gta aca gcc aag gtt ttt gag aca gag gtt tca	395
Leu Ala Asn Pro Phe Val Thr Ala Lys Val Phe Glu Thr Glu Val Ser	
20 25 30	

aca gca ttc ctg gag gag aca caa agg aca gat gag tca cat gaa gga	443
Thr Ala Phe Leu Glu Glu Thr Gln Arg Thr Asp Glu Ser His Glu Gly	
35 40 45	

tgg gag gag gga agg tgg ctg ttg ata ggt att ttg aga cac tct att	491
Trp Glu Glu Gly Arg Trp Leu Leu Ile Gly Ile Leu Arg His Ser Ile	
50 55 60 65	

tga gtcctacaca acactcccc ctcccccaa accattttta tgtctattga	544
*	

cctttcctct agtcatacag ggaaattcac agttacctac aaagaaccac taattgtaac	604
aagtcaagag gaaacttatt tttgataatg actcattgaa gatgttttga aaatttaaaa	664
ataagctctg ttagcagaag tctgtningaa aagcangaag gaantgtttg tttattanat	724
aaataaaagg cggcgaggac aacaaaaaaaa aaaaaaaaaa aagcggccgc	774

<210> 33
 <211> 1259
 <212> DNA
 <213> Rattus norvegicus

<220>
 <221> CDS
 <222> (92)...(220)

<400> 33	
tctagegaac cccttcgcga aggggttcgc cgaaggggtt cgcttcagga gttaatgtag	60
acttgactta agcatcctga tttaaccaag a atg gtg gca cac aac ttt aac	112
Met Val Ala His Asn Phe Asn	
1 5	

ccc cat gct ggg gaa gca gag gca cac tta atc tgt gtg agt ccc agg	160
Pro His Ala Gly Glu Ala Glu Ala His Leu Ile Cys Val Ser Pro Arg	
10 15 20	

cca tcc agg gat acc gta gta gtg aga ccc tgt ctc aca aaa caa aga	208
Pro Ser Arg Asp Thr Val Val Val Arg Pro Cys Leu Thr Lys Gln Arg	
25 30 35	

atg gga att tag ggctgggtggg gctcagcatg caactgtgcc tgttacctag	260
--	-----

bioRxiv preprint doi: <https://doi.org/10.1101/111111>; this version posted November 1, 2016. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted bioRxiv a license to display the preprint in perpetuity. It is made available under aCC-BY-NC-ND 4.0 International license.

Met Gly Ile *

40

tctggcctga	gttcaattcc	caagactcaa	tgtatgagga	gagaaacgat	ttctgaactc	320
attcattgat	ctccaaatgt	gtggtatagg	tgcccttccc	ttaaataaaa	caaacaaaca	380
aaaaacaaca	aaaacaacaa	accccccaata	aatgtatatt	taatttttaa	agactgtact	440
tgggcatggt	acttcacatc	tacagttacg	acattctaga	ggctcaggcc	tgggaattgc	500
tatgaatttg	aggccagtct	gggttagagt	gactttctcat	ctaggcagga	ctacgtaata	560
agtctttgcc	caaaaataaa	cagcaaccca	aataagagca	acaagaattc	tccctccaaa	620
tagtaacctg	ggcctggaga	gacagcttag	caactgagtg	cttgccgagc	catcgaggac	680
tggagtcctg	attccagcac	ccgtgtgaca	gacaagctgg	gcgttcactc	atgctgatga	740
acccaaggc	tgaggagaca	ctgactcttc	tctggccctg	ttcatgctgt	ccacaggtgc	800
ccaagtagca	gttaagtaga	ctgtcagaca	acatggctgg	ctttttaagc	aagaacagta	860
actgaagaaa	tacacttttg	aagtactgtt	aattttgctt	aaaacttggt	agggagctgg	920
aggatggctc	agtgggttaag	agcactgact	gctcttccag	aggtcctgag	ttcaattccc	980
agcaaccaca	tggtggctca	caaccatctg	taatgagctc	tgatgccctc	tttttggtgt	1040
gtctgaagac	agcgacagtg	tactcatata	aaataaaaata	aatctttttt	ttttttaaaa	1100
gaaatttgct	agagatatgg	caggaagggt	atattttttac	ctattttacct	gggtgggctaa	1160
tctgtgtatt	tttttcaaaa	ttaagatact	atataggagc	cgcgaagggg	tcgctaggcc	1220
agtgtgatgg	atatctgcag	aattcgggta	gccgaattc			1259

<210> 34

<211> 541

<212> PRT

<213> Rattus norvegicus

<400> 34

Met	Ala	Gly	Ala	Ile	Ile	Glu	Asn	Met	Ser	Thr	Lys	Lys	Leu	Cys	Ile
1				5					10					15	
Val	Gly	Gly	Ile	Leu	Leu	Val	Phe	Gln	Ile	Val	Ala	Phe	Leu	Val	Gly
			20					25					30		
Gly	Leu	Ile	Ala	Pro	Ala	Pro	Thr	Thr	Ala	Val	Ser	Tyr	Val	Ala	Ala
			35				40					45			
Lys	Cys	Val	Asp	Val	Arg	Lys	Asn	His	His	Lys	Thr	Arg	Trp	Leu	Met
	50					55					60				
Pro	Trp	Gly	Pro	Asn	Lys	Cys	Asn	Lys	Ile	Asn	Asp	Phe	Glu	Glu	Ala
65				70					75					80	
Ile	Pro	Arg	Glu	Ile	Glu	Ala	Asn	Asp	Ile	Val	Phe	Ser	Val	His	Ile
			85					90					95		
Pro	Leu	Pro	Ser	Met	Glu	Met	Ser	Pro	Trp	Phe	Gln	Phe	Met	Leu	Phe
			100					105					110		
Ile	Leu	Gln	Ile	Asp	Ile	Ala	Phe	Lys	Leu	Asn	Asn	Gln	Ile	Arg	Glu
	115					120					125				
Asn	Ala	Glu	Val	Ser	Met	Asp	Val	Ser	Leu	Gly	Tyr	Arg	Asp	Asp	Met
	130					135					140				
Phe	Ser	Glu	Trp	Thr	Glu	Met	Ala	His	Glu	Arg	Val	Pro	Arg	Lys	Leu
145				150					155					160	
Arg	Cys	Thr	Phe	Thr	Ser	Pro	Lys	Thr	Pro	Glu	His	Glu	Gly	Arg	His
			165					170					175		
Tyr	Glu	Cys	Asp	Val	Leu	Pro	Phe	Met	Glu	Ile	Gly	Ser	Val	Ala	His
	180						185					190			
Lys	Tyr	Tyr	Leu	Leu	Asn	Ile	Arg	Leu	Pro	Val	Asn	Glu	Lys	Lys	Lys
	195					200					205				
Ile	Asn	Val	Gly	Ile	Gly	Glu	Ile	Lys	Asp	Ile	Arg	Leu	Val	Gly	Ile
	210				215					220					
His	Gln	Asn	Gly	Gly	Phe	Thr	Lys	Val	Trp	Phe	Ala	Met	Lys	Thr	Phe
225				230					235					240	

Leu	Thr	Pro	Ser	Ile	Phe	Ile	Ile	Met	Val	Trp	Tyr	Trp	Arg	Arg	Ile	
				245					250						255	
Thr	Met	Met	Ser	Arg	Pro	Pro	Val	Leu	Leu	Glu	Lys	Val	Ile	Phe	Ala	
			260					265					270			
Leu	Gly	Ile	Ser	Met	Thr	Phe	Ile	Asn	Ile	Pro	Val	Glu	Trp	Phe	Ser	
	275						280					285				
Ile	Gly	Phe	Asp	Trp	Thr	Trp	Met	Leu	Leu	Phe	Gly	Asp	Ile	Arg	Gln	
	290					295					300					
Gly	Ile	Phe	Tyr	Ala	Met	Leu	Leu	Ser	Phe	Trp	Ile	Ile	Phe	Cys	Gly	
305				310					315						320	
Glu	His	Met	Met	Asp	Gln	His	Glu	Arg	Asn	His	Ile	Ala	Gly	Tyr	Trp	
			325						330					335		
Lys	Gln	Val	Gly	Pro	Ile	Ala	Val	Gly	Ser	Phe	Cys	Leu	Phe	Ile	Phe	
		340						345					350			
Asp	Met	Cys	Glu	Arg	Gly	Val	Gln	Leu	Thr	Asn	Pro	Phe	Tyr	Ser	Ile	
	355					360						365				
Trp	Thr	Thr	Asp	Val	Gly	Thr	Glu	Leu	Ala	Met	Ala	Phe	Ile	Ile	Val	
	370					375					380					
Ala	Gly	Ile	Cys	Leu	Cys	Leu	Tyr	Phe	Leu	Phe	Leu	Cys	Phe	Met	Val	
385				390					395						400	
Phe	Gln	Val	Phe	Arg	Asn	Ile	Ser	Gly	Lys	Gln	Ser	Ser	Leu	Pro	Ala	
			405					410						415		
Met	Ser	Lys	Val	Arg	Arg	Leu	His	Tyr	Glu	Gly	Leu	Ile	Phe	Arg	Phe	
		420						425					430			
Lys	Phe	Leu	Met	Leu	Ile	Thr	Leu	Ala	Cys	Ala	Ala	Met	Thr	Val	Ile	
	435						440					445				
Phe	Phe	Ile	Val	Ser	Gln	Val	Thr	Glu	Gly	His	Trp	Lys	Trp	Gly	Gly	
	450					455				460						
Val	Thr	Val	Gln	Val	Ser	Ser	Ala	Phe	Phe	Thr	Gly	Ile	Tyr	Gly	Met	
465				470						475					480	
Trp	Asn	Leu	Tyr	Val	Phe	Ala	Leu	Met	Phe	Leu	Tyr	Ala	Pro	Ser	His	
			485						490					495		
Lys	Asn	Tyr	Gly	Glu	Asp	Gln	Ser	Asn	Gly	Asp	Leu	Gly	Val	His	Ser	
		500						505					510			
Gly	Glu	Glu	Leu	Gln	Leu	Thr	Thr	Thr	Ile	Thr	His	Val	Asp	Gly	Pro	
	515					520						525				
Thr	Glu	Ile	Tyr	Lys	Leu	Thr	Arg	Lys	Glu	Ala	Gln	Glu				
	530					535						540				

<210> 35
 <211> 777
 <212> DNA
 <213> Rattus norvegicus

<220>
 <221> CDS
 <222> (247)...(387)

<400> 35	
tctagcgaac cccttcgtct cctcttaaac atcttaagac aagctgttat catctacact	60
gctcttagta ctgttctttt ctaagattct tctaatatga cacattaaga ctttcttaaa	120
atgtacaact gctacgctga tctaaacatt caaagtgcac acatttcgct atgaagccac	180
gtgaccagag tcttgaggac taatttctgt cttagtcaga ttcttattgc tatatgaaga	240
aatacc atg ata gtg tca act ttt ata aag aaa aag tat tcc ttt ggg	288
Met Ile Val Ser Thr Phe Ile Lys Lys Lys Tyr Ser Phe Gly	
1 5 10	

<210> 40
<211> 1142
<212> DNA
<213> Rattus norvegicus

<220>
<221> misc_feature
<222> (1)...(1142)
<223> n = A,T,C or G

<400> 40
tctagcgaac cccttcggct ttttctgatt taaagtgaag aaatggccat atttgcttga 60
taatcttcag ttgtgtctct ggaactcaac aaagaacgca ttttatgaaa tatacagctg 120
tcttcggtaa agccaacttt cttacacata tttcgggaag taattaacta caatttggac 180
ttatagttac aagggttgct tcgaaacact gctctaaatg tgtctcgtgt tggggtgcta 240
ctttgcttat gtgtaaattt cacagtaatg caatagagaa aggggtgttg tgggtgtggc 300
ttgtgggggg gattgttttg ttgttgttgt ttgagataaa gcttcattct gtagccagga 360
aagcctggaa tttactgtgt catcccaggt agcttcaaac tgggtgcctat cctgcctcag 420
cctccaacgt gttgcaattg caggagtaac ctaccacatc ctgcagctac agtgatctag 480
aacctccccg tcgaagcccc accaccatag aaaccaattt gcattaagtt ttagaattcc 540
caacccaact aaagtttaat aaaaaaagaa aaacaaaaca agattttaaat cattctttcc 600
ctcattcttt tttnnagatnc agggctcncc tagttttnaa caaacacagn ngcagngnng 660
ggnnccccng gnggggnttt tttncnttgn gccnctnngc ancccccccn cccaggcngg 720
atngggnggg gtataaaaagt nttancnggc anatgnnctn ggngcanacc caagtntatc 780
aggnccnann ttncncccca ganaactaga nancntnngc atagtanang ccccntgtgn 840
agatttnaaa nccnccctgn cacaganana gaancctana tagaaaantc aaaatatttn 900
ggngcccaan gttnccccacc ctgtagagng ggncccaaaa ancngccncc aganagcnng 960
atatntgagt tntgacctnt attctttact acnacgcntt gagagaatat tntgntgggg 1020
ccctanccac atgttttgnc ccaagantgt aaanccactt naannctgng ggatatctcn 1080
ctgcanacag aagtgccng cggtatttta aaaaaaaaaa taaaaaaaaa aaaggngccn 1140
cc 1142

<210> 41
<211> 502
<212> DNA
<213> Rattus norvegicus

<220>
<221> misc_feature
<222> (1)...(502)
<223> n = A,T,C or G

<400> 41
tctagcgaac cccttcgtgg agactgtgga agttatgtat gaataggaga gtgtgtgttg 60
tgtaacacag acagaaggac attggatcat gttgaacccg caccaccaac tatgagtgat 120
ggtatggaaa gaatgcgaac atttaaactg cgccaatgcg gcggccatct tggtgagaaa 180
gttctagacc gagctttgat gtgatttttt tgatggtaca atgcagcgag catggccacg 240
ggagctttga atccagccga cagctccgag atttgccctt ccagtgcctt tgctaccgt 300
agagaggact gctgagatgg gattccttgt gacaagccta cttaccttta actgccagca 360
tttgtaagggt gcaatcttgt gtattggttt tttattttga cagttttgaa aacatgtttg 420
ntgntcttgg tgtttttcca gtaaaagtaa tcacaaagga aaaaaaaatt aaaaaaaaaa 480
aaaaaaaaaa aaaagcggcc gc 502

<210> 42
<211> 1426
<212> DNA
<213> Rattus norvegicus

<220>
 <221> misc_feature
 <222> (1)...(1426)
 <223> n = A,T,C or G

<400> 42
 tctagcgaac cccttcgcct tcatatgggt ttacactgta tgcattctcac cgcggcccg 60
 aacctttcct ctcatcccaa tcctgtttga ggggacgggg ggcagggacg gacaacccaa 120
 gacaagggat atttgtgctg tgggtattgc atcttatgga gggctgtagc taactgggac 180
 tcctgggtga cccaacagg cctttgatcc tctgtctctc cccgcttgat ctttcttacc 240
 ttatgcttcc ccaagtgcag ctgagggact acacagtggc tcccggccca ctccaaacac 300
 aggaaatcaa tctcaggag aggagataag aagtgaggag aagccaagat tcaaccaata 360
 gatggtaatt gctcctggga cggccccccc aagcatcatt tccataggaa ggactgagtt 420
 tggctcctga agcccagtgg agtacctttc tctgctgaa ttctgttggt atccctggcc 480
 aagtctctt tccagaaacc ccacctttaa aaccagctga gaaggacctt cttctctatg 540
 tttaataggt aactttccat agcttagctt ccctgcagtc tcccgagtc ccagttaaaa 600
 ttctgccata ggtcaaaagt ggggttgaga ggtgaagtca gaggccatgc atggagctca 660
 gaacgtttct aaacctcctg tgattcattg agtagccct agactctaga aggtcagat 720
 gccaaaaagg ktgactttat aatttcttag ggtcttctca tgggatogkt ttcagagtgg 780
 gcattcacta aatgatagca agtttattaa ttgtttccca gygcctgatc tctttatttn 840
 cccagggtt ccaaccagag cccttggttg aaagtctccc acccaccccc caccctgaga 900
 cttggtgnt ttctgagatt ccccaggat ggcaaaattg gcattcttac agggagccct 960
 gacttctagc acgttaccta gattttttac cctgctctct ctgcctattt tactatggga 1020
 tcaactgntct ctttgactt aaggaaccac cttgaagtag agtgaggtag ccacgtgttg 1080
 gtggcgaaga atataagcat tggctcttaa aagagaactt ctatgaagtc aggtgcaag 1140
 ctttaacatg gcacaagtg caccttactg gctgctaagt ctggatgtca accaaaggtc 1200
 aactctntaa ttaaagaaaa gcaagggaga aganaggtgg aagnggcttn cataaacttt 1260
 attcaaaatg tctaccagga atggtggtga caccaataat cccacatgtt ggatgtngag 1320
 gcaggaagaa tgatggtaag gggcatcctc actacataat gaggtaggc tngactaggt 1380
 taactntgct tnaaaaaaaaa aaaaaaaaaa aaaaaaaagg gnggcc 1426

<210> 43
 <211> 985
 <212> DNA
 <213> Rattus norvegicus

<220>
 <221> CDS
 <222> (79)...(255)

<400> 43
 tctagcgaac cccttcgcaa gaactcagac tgctcctgcc tgacttcccta ggtgtcatag 60
 ctctcttctg ccgccagt atg aca tca tca agg aca acg agc cca ata aca 111
 Met Thr Ser Ser Arg Thr Thr Ser Pro Ile Thr
 1 5 10
 aca agg aaa aaa cca aga gtg cat cag aga cca gca ccc cag agc acc 159
 Thr Arg Lys Lys Pro Arg Val His Gln Arg Pro Ala Pro Gln Ser Thr
 15 20 25
 agg gtg ggg gtc tcc tcc gaa gca aga tat gaa acc ott tca gtg ctt 207
 Arg Val Gly Val Ser Ser Glu Ala Arg Tyr Glu Thr Leu Ser Val Leu
 30 35 40
 gct ctg agc agc tca gaa gta gaa tgc gag agg acc tca ctg ttc tga 255
 Ala Leu Ser Ser Ser Glu Val Glu Cys Glu Arg Thr Ser Leu Phe *

55

cgatgattgt	ccaacacaca	tccggccctc	tccgtgtctc	ctcccaccac	catcttctcc	315
tatcaccggg	cttactatct	tctctcctgg	ctttcctctt	tctgatggcg	gttcctgaag	375
cctccaacta	accctaact	cggggagcgc	ctcgacagtg	tttgtggcta	aggctacact	435
cagagacaga	gttgacagaat	gagggagacc	cagcccagag	gacgccattg	ctgggaggtta	495
gactgggtgc	gagggccctt	ggcacaggac	tcacatctgg	gctgttcagc	ttgacccgaa	555
ggctgtgtgt	gaaaggggga	aaaagacaag	attgccaggc	agggctgttg	tttttgtggc	615
ttcgagggac	aagaacctgg	ctaaaaggca	gcagccctgc	tgttcttttt	ctcctctgtc	675
ctgtttccta	ccttacaaga	agtccatgca	accaaccggg	gctctggcac	ttttcttggt	735
tatttcctc	ctggcttcca	aacaagccct	ctgtggacat	catcaaagca	tggataaccc	795
ccctctgcag	ggtgggcttc	attctccgct	ggtccctgta	gccttctctg	acacagggtg	855
aaagtgttaa	aagtggtagg	agtgcagcta	gccacagggt	ctccttttcc	catctcagtc	915
tgaccaagga	ggctgaacta	cgaacccaaa	ttcagcgaaa	aaaaaaaaaa	aaaaaaaaaa	975
aagcgggcgc						985

```
<210> 44
<211> 2010
<212> DNA
<213> Rattus norvegicus
```

```
<220>
<221> CDS
<222> (239)...(1507)
```

```
<221> sig_peptide
<222> (239)...(343)
```

```

<400> 44
tctagcgaac cccttcgcgg ggacagacat ggagaaggag atggaggacc ccctggctgg      60
agcagaccaa cagaataggc aactatggct ggagaaccgg gtatcagagt aatgcttgac      120
ctcgggaaac accaaatttc ttcttcgat cgcagaagta gtactcggcg aaattcacta      180
ggtaggaggc tctcatctg ggaagaaccg gtgcctgggg ggacctggct ggataggt      238
atg ggg gat cga ggc cgg tcc cct agt ctc cgg tcc ccc cat ggc agt      286
Met Gly Asp Arg Gly Arg Ser Pro Ser Leu Arg Ser Pro His Gly Ser
-35             -30             -25             -20

```

cct cca act cta agc acc ctc act ctc ctg ctg ctc ctc tgt gga cag 334
Pro Pro Thr Leu Ser Thr Leu Thr Leu Leu Leu Leu Cys Gly Gln
-15 -10 -5

gct cac tcc cag tgc aag atc ctc cgc tgc aat gcc gag tac gtc tcg 382
Ala His Ser Gln Cys Lys Ile Leu Arg Cys Asn Ala Glu Tyr Val Ser
1 5 10

tcc act ctg agc ctt cgg gga ggg ggc tca ccg gac acg cca cat gga 430
 Ser Thr Leu Ser Leu Arg Gly Gly Gly Ser Pro Asp Thr Pro His Gly
 15 20 25

ggc ggc cgt ggt ggg ccg gcc tca ggt ggc ttg tgt cgc gcc ctg cgc 478
Gly Gly Arg Gly Gly Pro Ala Ser Gly Gly Leu Cys Arg Ala Leu Arg
30 35 40 45

tcc tac gct ctc tgc acg cgg cgc acc gcc cgc acc tgc cgc ggg gac 526
 Ser Tyr Ala Leu Cys Thr Arg Arg Thr Ala Arg Thr Cys Arg Gly Asp
 50 55 60

ctc	gct	ttc	cac	tcc	gcg	gtg	cat	ggc	ata	gag	gac	ctg	atg	atc	cag	574	
Leu	Ala	Phe	His	Ser	Ala	Val	His	Gly	Ile	Glu	Asp	Leu	Met	Ile	Gln		
			65				70						75				
cac	aac	tgc	tca	cgc	cag	ggt	ccc	acg	gcc	tcg	ccc	ccg	gcc	cgg	ggt	622	
His	Asn	Cys	Ser	Arg	Gln	Gly	Pro	Thr	Ala	Ser	Pro	Pro	Ala	Arg	Gly		
			80				85						90				
cct	gcc	ctg	ccc	ggg	gcc	ggc	cca	gcg	ccc	ctg	acc	cca	gat	ccc	tgt	670	
Pro	Ala	Leu	Pro	Gly	Ala	Gly	Pro	Ala	Pro	Leu	Thr	Pro	Asp	Pro	Cys		
			95				100						105				
gac	tat	gaa	gcc	cgg	ttt	tcc	agg	ctg	cac	ggt	cga	acc	ccg	ggt	ttc	718	
Asp	Tyr	Glu	Ala	Arg	Phe	Ser	Arg	Leu	His	Gly	Arg	Thr	Pro	Gly	Phe		
110						115						120			125		
ttg	cat	tgt	gct	tcc	ttt	gga	gac	ccc	cat	gtg	cgc	agc	ttc	cac	aat	766	
Leu	His	Cys	Ala	Ser	Phe	Gly	Asp	Pro	His	Val	Arg	Ser	Phe	His	Asn		
			130						135						140		
cac	ttt	cac	aca	tgc	cgc	gtc	caa	gga	gct	tgg	ccc	cta	cta	gat	aac	814	
His	Phe	His	Thr	Cys	Arg	Val	Gln	Gly	Ala	Trp	Pro	Leu	Leu	Asp	Asn		
			145						150						155		
gac	ttc	ctc	ttt	gtc	caa	gcc	acc	agc	tcc	ccg	gta	gca	tcg	gga	gcc	862	
Asp	Phe	Leu	Phe	Val	Gln	Ala	Thr	Ser	Ser	Pro	Val	Ala	Ser	Gly	Ala		
			160						165						170		
aac	gct	acc	acc	atc	cgg	aag	atc	act	atc	ata	ttt	aaa	aac	atg	cag	910	
Asn	Ala	Thr	Thr	Ile	Arg	Lys	Ile	Thr	Ile	Ile	Phe	Lys	Asn	Met	Gln		
			175						180						185		
gaa	tgc	att	gac	cag	aaa	gtc	tac	cag	gct	gag	gta	gac	aat	ctt	cct	958	
Glu	Cys	Ile	Asp	Gln	Lys	Val	Tyr	Gln	Ala	Glu	Val	Asp	Asn	Leu	Pro		
190						195						200			205		
gca	gcc	ttt	gaa	gat	ggt	tct	gtc	aat	ggg	ggc	gac	cga	cct	ggg	ggc	1006	
Ala	Ala	Phe	Glu	Asp	Gly	Ser	Val	Asn	Gly	Gly	Asp	Arg	Pro	Gly	Gly		
			210						215						220		
tcg	agt	ttg	tcc	att	caa	act	gct	aac	ctt	ggg	agc	cac	gtg	gag	att	1054	
Ser	Ser	Leu	Ser	Ile	Gln	Thr	Ala	Asn	Leu	Gly	Ser	His	Val	Glu	Ile		
			225						230						235		
cga	gct	gcc	tac	att	gga	aca	act	ata	atc	gtt	cgt	cag	aca	gct	gga	1102	
Arg	Ala	Ala	Tyr	Ile	Gly	Thr	Thr	Ile	Ile	Val	Arg	Gln	Thr	Ala	Gly		
			240						245						250		
cag	ctc	tcc	ttc	tcc	atc	agg	gta	gcg	gag	gat	gtg	gca	cgg	gcc	ttc	1150	
Gln	Leu	Ser	Phe	Ser	Ile	Arg	Val	Ala	Glu	Asp	Val	Ala	Arg	Ala	Phe		
			255						260						265		
tct	gct	gag	cag	gat	cta	cag	ctg	tgt	gtt	ggg	gga	tgc	cct	ccg	agc	1198	
Ser	Ala	Glu	Gln	Asp	Leu	Gln	Leu	Cys	Val	Gly	Gly	Cys	Pro	Pro	Ser		
270						275						280			285		
cag	cga	ctc	tct	cgc	tca	gag	cgc	aat	cgc	cgt	ggg	gcg	ata	gcc	ata	1246	

Gln Arg Leu Ser Arg Ser Glu Arg Asn Arg Arg Gly Ala Ile Ala Ile	
290 295 300	
gat act gcc aga agg ttg tgt aag gaa ggg ctt ccg gtt gaa gat gcc	1294
Asp Thr Ala Arg Arg Leu Cys Lys Glu Gly Leu Pro Val Glu Asp Ala	
305 310 315	
tac ttc caa tcc tgc gtc ttt gat gtt tca gtc tcc ggt gac ccc aac	1342
Tyr Phe Gln Ser Cys Val Phe Asp Val Ser Val Ser Gly Asp Pro Asn	
320 325 330	
ttt act gtg gca gct cag tca gct ctg gac gat gcc cga gtc ttc ttg	1390
Phe Thr Val Ala Ala Gln Ser Ala Leu Asp Asp Ala Arg Val Phe Leu	
335 340 345	
acc gat ttg gag aac ttg cac ctt ttc cca gta gat gcg ggg cct ccc	1438
Thr Asp Leu Glu Asn Leu His Leu Phe Pro Val Asp Ala Gly Pro Pro	
350 355 360 365	
ctc tct cca gcc acc tgc cta gtc cgg ctt ctt tcg gtc ctc ttt gtt	1486
Leu Ser Pro Ala Thr Cys Leu Val Arg Leu Leu Ser Val Leu Phe Val	
370 375 380	
ctg tgg ttt tgc att cag taa gtaggccagc aacccgtgac tagtttggaa	1537
Leu Trp Phe Cys Ile Gln *	
385	

aagggtttgag gagagaggtt gatgtgagaa aacacaaaga tgtgccaaag gaaacagtgg	1597
ggacaggaga caacgacctt actcaatcac acgaggttgc agtccagggc tgaaatgacc	1657
ctagaataaaa gattctgaga cagggttttg cactccagac cttggtatgg gctccccatg	1717
aatttcccca ttagtgattt cccacttgta gtgaaattct actctctgta cacctgatat	1777
cactcctgca aggctagaga ttgtgagagc gctaagggcc agcaaaacat taaagggctg	1837
agatatctta aaggcagaaa ctagaaaagg ggaaccatg attatctata agaaaatcaa	1897
aagagggggtt tgggaattta gctcagtgg agagcacttg cctagcaagc gcaaggccct	1957
gggttcggtc cccagctcct aaaaaaaaaa aaaaaaaaaa aaaaagcggc cgc	2010

<210> 45
 <211> 705
 <212> DNA
 <213> Rattus norvegicus

<220>
 <221> misc_feature
 <222> (1)...(705)
 <223> n = A,T,C or G

<221> CDS
 <222> (54)...(230)

<400> 45	
tctagcgaac cccttcgtgg ggattaaggt tctctatagc taagcctgtc nga atg	56
Met	
1	

aca aca ccc aga gat ctc acc tgg ggt ggt ggg agc act ctc tgt ctt	104
Thr Thr Pro Arg Asp Leu Thr Trp Gly Gly Gly Ser Thr Leu Cys Leu	
5 10 15	

gag gga aca tgt acc tac tct ctc ctt cca caa gag cca cat aca ctt	152
Glu Gly Thr Cys Thr Tyr Ser Leu Leu Pro Gln Glu Pro His Thr Leu	
20 25 30	

aga agt tcc agt gaa gat cta tgt gct tca gaa gag agg gga ctt gga	200
Arg Ser Ser Ser Glu Asp Leu Cys Ala Ser Glu Glu Arg Gly Leu Gly	
35 40 45	

ggt gaa agg ggg agt ggg agg ggg gct tga ggacctanct gaaagatttt	250
Gly Glu Arg Gly Ser Gly Arg Gly Ala *	
50 55	

angctgaaag aacttccttg attcaaagac atatgtcagt ngacccaaca atgagaatga	310
atatgagggc caggaaaact tgtgggaatc agtctcaaga cngaaacnga gaaagaaaga	370
aaagtggnta ggactcanat tggggaacct gggtagacag gagtggcnag ggaagaaagg	430
gatcttgggt tntccacagt ttgagacaca tccggngntc gacctattc ccngaagccn	490
cannanattgt tgcttcccn tcnntnnaat gggcctggng gtccctnctcc ctttncctng	550
gacatgaaaa ngtnntctgc nnanataacc cccntcttcc ctcccccttn antntgtccc	610
tacntttttg tccctttttt ttttnaaaaa annaaaataa aggggnncnn tnttcccttn	670
gaaaaaaaaa aaaaaaaaaa aaaaaaccgc ccncc	705

<210> 46
 <211> 968
 <212> DNA
 <213> Rattus norvegicus

<220>
 <221> misc_feature
 <222> (1)...(968)
 <223> n = A,T,C or G

<221> CDS
 <222> (86)...(244)

<400> 46	
tctagcgaac cccttcgcga aggggttcgc ttacattcac gcttaagcat attaaactgta	60
catattaact gatttagagg atact atg gat tcc aca tct tcc ctg agc ata	112
Met Asp Ser Thr Ser Ser Leu Ser Ile	
1 5	

ggg att gat ttg aaa aat gac agg gtt ggc tgt cga ccc cca tcc gag	160
Gly Ile Asp Leu Lys Asn Asp Arg Val Gly Cys Arg Pro Pro Ser Glu	
10 15 20 25	

gaa gca ggt aag gaa tca ctt agg aga act gat ctc aac att ctt cag	208
Glu Ala Gly Lys Glu Ser Leu Arg Arg Thr Asp Leu Asn Ile Leu Gln	
30 35 40	

ttc ttt cta tta ttt act tgt tta gcc tgg agt taa attcccactc	254
Phe Phe Leu Leu Phe Thr Cys Leu Ala Trp Ser *	
45 50	

cttgtgagca cttctaattt gaaaatccac tttcttcaat attttcgaaa tttaaaactg	314
atggatgacg tgacaaaact tccacgagtt aagaattctc cacctctgat ctcatgcag	374
cagggcacaa tccaaggcat gtgaattgac ttccaggttt atgtgacata taaatgaatt	434
ctgtctctag atttgatcc cattctccta aatatctcac catgcatgtg cagatattct	494

1000
 900
 800
 700
 600
 500
 400
 300
 200
 100
 0

aaagtctaaa aatatctgat attgcaaact tttctgggtca aaacattttg gatgagccat	554
ttaacagcca aggtatttga gacagagggt tcaacagcat tcctggagga gacacaaaag	614
acagatgagt cacatgaagg atgggaggag ggaagggtgc tgttgatagg tattttgaga	674
cactctatct gagtcctaca caaacactccc cctccccccc ctccccccaa accattttta	734
tgtctattga cctttcctct agtcatacag ggacattcac agttacctac aaagaaccag	794
aattgtaaca agtcaagagg aaacttattt ttgataatga ctcattgaag atgttttgaa	854
aatttaaaaa taagctcttg taagcagaag tctgtgagaa aagcaagaag gaattgtttg	914
tttattaaat aaataaaaagg cnnannnnnaa aaaaaaaaaa aaaaangcgg ccgc	968

<210> 47
 <211> 1183
 <212> DNA
 <213> Rattus norvegicus

<220>
 <221> misc_feature
 <222> (1)...(1183)
 <223> n = A,T,C or G

<221> CDS
 <222> (246)...(983)

<400> 47	
tctagcgaac cccttcggca gacagcatcc ctccaaggc tactcagggt ttaaaccctg	60
cttctgaagt gacatgtcct gcaaagaaag tccccacgtg ggtgtttcca ccaccaactgt	120
cagctctgta gctgtgcaag ctggggactc caagatcgtg atagccgttg tcaagtgtgg	180
caaatgggtg cggctccaac tggctgaggc acagcccaat ctctagaaa ttgggagcag	240
tcaag atg aaa cca gaa aac tgc ttc acg atc acg agc tcc ttc tgg cca	290
Met Lys Pro Glu Asn Cys Phe Thr Ile Thr Ser Ser Phe Trp Pro	
1 5 10 15	

agc tta agg cct tgg aag atc gtg tgt ggg gac tct tac agg aag cag	338
Ser Leu Arg Pro Trp Lys Ile Val Cys Gly Asp Ser Tyr Arg Lys Gln	
20 25 30	

aca gga cgg ctg aag caa aca agg agc aaa gtg agg tgt cga tgc cat	386
Thr Gly Arg Leu Lys Gln Thr Arg Ser Lys Val Arg Cys Arg Cys His	
35 40 45	

ggc cag act ctg ggc gaa gca tgg gcc acc ctg gtc ttc atg ctt gaa	434
Gly Gln Thr Leu Gly Glu Ala Trp Ala Thr Leu Val Phe Met Leu Glu	
50 55 60	

aga aga agg gag ctc ctc gga ctg aca tct gag ttt ttt caa agc gcc	482
Arg Arg Arg Glu Leu Leu Gly Leu Thr Ser Glu Phe Phe Gln Ser Ala	
65 70 75	

ttg gag ttt gct ata aaa ata gac caa gct gaa gat ttt ctg cag aat	530
Leu Glu Phe Ala Ile Lys Ile Asp Gln Ala Glu Asp Phe Leu Gln Asn	
80 85 90 95	

cct cac gag ttt gag agt gcc gaa gcc tta cag tca ctt ctt ctg ctt	578
Pro His Glu Phe Glu Ser Ala Glu Ala Leu Gln Ser Leu Leu Leu Leu	
100 105 110	

cat gac cga cac gcc aaa gaa ctc tta gaa cga tct cta gtc ctt tta	626
His Asp Arg His Ala Lys Glu Leu Leu Glu Arg Ser Leu Val Leu Leu	

1000
 900
 800
 700
 600
 500
 400
 300
 200
 100
 0

115	120	125	
aac aaa agc caa caa ctc act gac ttc ata gaa aaa ttc aag tgt gat			674
Asn Lys Ser Gln Gln Leu Thr Asp Phe Ile Glu Lys Phe Lys Cys Asp			
130	135	140	
gga tct cct gtg aat tct gag ctc atc cag gga gct cag agc agt tgt			722
Gly Ser Pro Val Asn Ser Glu Leu Ile Gln Gly Ala Gln Ser Ser Cys			
145	150	155	
ctg aag atc gac agc ctc ctt gaa ctt ctg caa gac agg aga agg cag			770
Leu Lys Ile Asp Ser Leu Leu Glu Leu Leu Gln Asp Arg Arg Arg Gln			
160	165	170	175
ctg gac aag cac ttg cag caa cag agg cag gag ttg tct cag gtt ctg			818
Leu Asp Lys His Leu Gln Gln Gln Arg Gln Glu Leu Ser Gln Val Leu			
180	185	190	
cag tta tgt ctg tgg gac caa caa gaa agc cag gtt tct tgt tgg ttt			866
Gln Leu Cys Leu Trp Asp Gln Gln Glu Ser Gln Val Ser Cys Trp Phe			
195	200	205	
cag aaa aca ata aga gat ctg cag gaa cag agt ctg ggt tca tcc ctt			914
Gln Lys Thr Ile Arg Asp Leu Gln Glu Gln Ser Leu Gly Ser Ser Leu			
210	215	220	
tca gac aac aaa gag tta atc cgt aag cac gag gac ctg cca tca aag			962
Ser Asp Asn Lys Glu Leu Ile Arg Lys His Glu Asp Leu Pro Ser Lys			
225	230	235	
caa aga gtc cct gca gtt tag gaattgaaca gaacagtttc ctgattgaat			1013
Gln Arg Val Pro Ala Val *			
240	245		
gatcttggcg cctyyttanc ggntgcagat ggtggggcct cctctggntt ctcatectct			1073
tccactaate tggatttttg ttcccctggt gtgccacatc actttaattt gaaagaaaaa			1133
aaataaattg ggccggaaaa aaaaaaaaaa aaaaaaaaaa rrscggccnc			1183

<210> 48

<211> 1051

<212> DNA

<213> Rattus norvegicus

<400> 48

tctagcgaac cccttcgcgc aagatggccg cttcccagac cgctccgcgg catcttcaag	60
atgcgcgaga agaacgtgca atctcgcgag atcaggctcg ctgcgcggca gtctgctcgc	120
agcctaccct tcctaggagt tggaggaggg aaagctagat tcgattaaga gcaaaaaatt	180
gttcacgcag cagagcagct gtccaaggaa gtatccaaag gaactgcacc tcagtaaaact	240
cctggcaagt cttaggatat gacaaagggc acaggatgca ttatgagaaa ggaaggctaa	300
ggtttttcaag aacacagatt tacatcaaac ttgcgttctg aattaatctt tgagaataact	360
ggactgtgag ctagacattg agtaagaggt ttgttatatc aagaatgtga tctaaaaaaa	420
aaacattcat atcttcctcc cacaagagga tattttgaaa ctgtgggtca aagtcagact	480
acaggagagc cctcaaatat gccaaatgtg acagacagca ggattttgaa aatatagtgg	540
gagtatgtga agatgttcca gtcaaagaga cattgtttcc aaaggaaaga aagtcagtc	600
gocctcacagg aattgtgtat tccctggtag taatgcaaat ggaccacata tggctttctt	660
ctttaaagag aatacctaatt tttagctaca gagtaaaatg ctgatgatac aaacogtgac	720
aagtggaggg acaagaaagt aaatggactg atggtgccat tgtggactgg gagggtaaaa	780

Lys Leu Val Arg Ile Trp Glu Asp Arg Val Ser Leu Thr Lys Leu Lys
 40 45 50

gag aag gtg acc agg gaa gat gga aga atc att cta agg ata gag aaa 367
 Glu Lys Val Thr Arg Glu Asp Gly Arg Ile Ile Leu Arg Ile Glu Lys
 55 60 65

gag gaa tgg aag act ctc cct tct tcc tta ctg aaa ctg aat cag cta 415
 Glu Glu Trp Lys Thr Leu Pro Ser Ser Leu Leu Lys Leu Asn Gln Leu
 70 75 80 85

cag gag tgg caa ctt cat agg acc gga ttg ttg aaa att cct gaa ttc 463
 Gln Glu Trp Gln Leu His Arg Thr Gly Leu Leu Lys Ile Pro Glu Phe
 90 95 100

att gga aga ttc cag cat ctc att ggt cta gac tta tct cgg aac aca 511
 Ile Gly Arg Phe Gln His Leu Ile Gly Leu Asp Leu Ser Arg Asn Thr
 105 110 115

att tca gag atc ccc ccg agg cat tgg act gnt cac tta gac ttc aag 559
 Ile Ser Glu Ile Pro Pro Arg His Trp Thr Xaa His Leu Asp Phe Lys
 120 125 130

gaa ctg att ctt agc tac aca aaa tca a 587
 Glu Leu Ile Leu Ser Tyr Thr Lys Ser
 135 140

<210> 51
 <211> 819
 <212> DNA
 <213> Rattus norvegicus

<220>
 <221> misc_feature
 <222> (1)...(819)
 <223> n = A,T,C or G

<400> 51
 totagcgaac cccttcgggtt ctgttggtcta cacagctgca gagccatggc tgaccgttca 60
 ctgtcagggg cacatgttac actaagcttc atgacagtga tgtaataatg ttacacattt 120
 gtctttagt tatgtattga agtttctgtc ctgttttggtg taaaaatgta tccactcttg 180
 tatatattta gacttgaaac taccacacaa atattggaac ggtttgcttt atgaagttaa 240
 aagtatcctt ccgaatggaa ctaacttgct ttgtgctcag acatatacta tgctgatgta 300
 ttttgcaata tactatctta aattaaatct ggtcactttg ttgccttttt aaaaagtgtg 360
 gtatttcaag tagagttatt ttctgaaat atatttgcaa actcaagctg ctttataatc 420
 aaggaatatt tttattgatt gaagaaaatg actgctgcaa ttcaaaagtg aacttatttt 480
 attatataga tgatttctta aaagctattt ataccatgat acaaaatcat gtagtgatcc 540
 tgggagtgctg tagttcttcc tgtaataaac attcaacact gtatgctaga ggcagcaatg 600
 ccaacactga agttattttg ggtgaaaacc gtcgtttotgn cctgttttagc tggggattat 660
 taaatccata taatgtatgt gcttatgtat gctacatgtg caagttagggt gtttctcttg 720
 tgttctgctt attaaatgtc attcagattc acttcttgaa ttctaataaa gaggggaagct 780
 attggaaaaa ataaaaaaaa aaaaaaaaaa gcggccgcc 819

<210> 52
 <211> 1648
 <212> DNA

<213> Rattus norvegicus

<220>

<221> misc_feature

<222> (1)...(1648)

<223> n = A,T,C or G

<400> 52

tctagcgaac	cccttcggtg	gcgcacgccg	gtaggatttg	ccacgcaaat	gctggaatta	60
aagacatgca	gcagcagcgc	cctgtgggtt	tgggttttta	tttgattgct	tattttttatc	120
taatttttaa	tttttttgtg	atgaacgttt	tatctgcatt	tatgtctctg	taccacattc	180
gtgcctggtg	ctatggaggo	caaaaaagga	ttttaggccc	gagattgtag	ttatagatgg	240
ttgtgggctg	ccaatctgag	tgtgaaaaat	taaacctggg	tactctgaaa	gaccagccag	300
tgtctttaac	tatcaggcca	cctctccagc	actattttat	tttattttat	ttgtggagat	360
agggctctct	tctctgtatc	ctagtctaac	ttaaaacata	aagaatattc	tgtatcagta	420
tccttgagta	ctaggattct	aggcacctgt	cattatgcct	agatttttaa	cagtgtgtgt	480
taattctaca	taaaaatgaa	tttcattatt	acattttcac	acttgtgaag	aatatacttt	540
gatcatattc	ccttctcctg	atactttttc	ctatccttcc	tccccactcc	attagttccc	600
ttcttctttt	cagagtctac	cttctacttt	ttactttgat	ttttttcccc	ccacattctg	660
tgggtgagag	aatgcataatt	acagttgtat	ttctgaatct	ggctaggtac	attcacttaa	720
cataattaat	gatcctgggc	gagcgaaggg	gttcncctan	cnaaccctt	cggttcaata	780
ccatttcaga	gatgggcatt	tccctcaatg	aaatacacaa	gtaaacattc	cgacattgtc	840
tttaggagtg	tttgttaaaa	aaaaaaaaaa	aaaaaacan	ancccaaaa	caaaaaaaaa	900
aaagctttgc	accttgcaaa	agtggctcctg	gcgtgggtag	attgctgtta	atcctttatc	960
aataacgttc	tatagagaat	atataaatat	atatataatt	atatctccta	gtccctgcct	1020
cttaagagcc	gaaaatgcat	gggtgttgta	gacattcggg	tgcactaaat	tcctctctga	1080
attttggtcg	ctgaagccgt	tcatttagca	actgtttata	ggtggttgat	gaatggttcc	1140
ttatctocat	ttcttcctat	gtagcttaag	cgccttcctt	cacagaatct	aataatctcg	1200
tctaggocat	tagccctgcc	ctttcttaac	attcttgtat	ttgttgaatt	tggcctctc	1260
gaaagcaata	gcaactgggt	ggcccaccca	agttttaacg	cccctgattc	catctatggc	1320
atttgtacca	aatataagtt	ggatgcattt	attttagaca	caaagcttta	ttttttogac	1380
atcgtgtttc	aagaaaaaaa	acaaatagaa	taacaataac	tatgactttg	aggccaatca	1440
tttttaggtg	tgtgtttgaa	gcatagaacg	tctnttaaac	totcaatggg	tccttcaaat	1500
gatgagttag	tatgtaacgt	aaatagcagt	ttctctctct	ctctctctct	ttttattttt	1560
tocanataga	gcactatgta	aatttagcat	atcaataata	caggaactat	ccnccaaaaa	1620
aaaaaaaaaa	aaaaaaaaaa	gcggccgc				1648

<210> 53

<211> 782

<212> DNA

<213> Rattus norvegicus

<220>

<221> misc_feature

<222> (1)...(782)

<223> n = A,T,C or G

<221> CDS

<222> (277)...(426)

<400> 53

tctagcgaac	cccttcgtag	aactaggagc	cagtgttgac	caaggctcgg	ggttgatac	60
cccactgcat	gctgcagcaa	ggcagtcag	tgtggaggtc	atcaatctgc	tactgagta	120
tggggctaac	ctgaaactca	gaaactcgca	gggcaaaagt	gctcttgagc	tcgtgctcc	180
caaaagtagt	gtggagcagg	cactcctgct	ccatgaaggt	ccacctgctc	tttctcagct	240
ctgccgcttg	tgtgtccgga	agtgcctggg	ccgcac atg	tca tca agc cat cta		294
			Met	Ser Ser Ser His Leu		

5

ggt gga aac atg ttg cct gct gta gga cac tta ata tac aca ttc agt 390
Val Gly Asn Met Leu Pro Ala Val Gly His Leu Ile Tyr Thr Phe Ser
25 30 35

ggc tta acc cac tat cct aaa aat ctg ctt acc taa ttagaataaaa 436
Gly Leu Thr His Tyr Pro Lys Asn Leu Leu Thr *
40 45

gccttcataa	atccaaatac	ttgcggtgaa	caaactcctg	gttagggttaa	tggntgccaa	496
gagataacca	gaaacctttc	aagtttttaa	ctcttggtaa	tttaaaatca	aactgaaata	556
gatggaaaat	aataatctat	ttttggataa	ttcaaggacc	cttcagtatc	tggggctggg	616
gtccgcattt	tgataactgg	atagacacac	acacaggtag	gatanggtaa	atnaactact	676
taaaagaatg	cctgggattt	aagtcctcca	gatatttttt	aggtngnggt	ttcctaaaat	736
aaaattctgg	agtgccaaaa	aaaaaaaaaa	aaaaaaaaaa	cgqggc		782

```
<210> 54
<211> 538
<212> DNA
<213> Rattus norvegicus
```

```
<220>
<221> misc_feature
<222> (1)...(538)
<223> n = A,T,C or G
```

<221> CDS
<222> (252) ... (464)

```

<400> 54
gtctagcgaa ccccttcggg aaacttcaac aaaggtacca gcaactacag cgccttgtcc      60
accagattt cttcagccaa aagtctcaga ctgagaaacg gttctcggag aagcattcga      120
ccctggtgaa tgatgcctac aagactcttc agggccccgt gagcagagga ctatatcttc      180
taaagctcca aggaatagaa attcctgaag ggacagatta tagaacagac agtcagttcc      240
ttgtggaaat c atg gaa atc aat gaa aaa ctc gca gac gcc aaa agt gag      290
          Met Glu Ile Asn Glu Lys Leu Ala Asp Ala Lys Ser Glu
              1              5              10

```

gca gcc atg gaa gag gta gaa gcc act gtc aga gct aaa cag aaa gaa 338
Ala Ala Met Glu Glu Val Glu Ala Thr Val Arg Ala Lys Gln Lys Glu
15 20 25

ttt acg gac aat ata aac aga gct ttt gaa caa ggt gat ttt gaa aaa 386
Phe Thr Asp Asn Ile Asn Arg Ala Phe Glu Gln Gly Asp Phe Glu Lys
30 35 40 45

gcc aag gaa ctt ctt aca aaa atg aga tac ttt tca aac ata gaa gaa 434
Ala Lys Glu Leu Leu Thr Lys Met Arg Tyr Phe Ser Asn Ile Glu Glu
50 55 60

aag atc aag tta agc aag aac cct ctc tag ttgctaactt aaaggtttta 484
Lys Ile Lys Leu Ser Lys Asn Pro Leu *

aaataaaactt tgtattttctt cannnnnnnan nnnnnannntn nnnnagcggc cgcc

538

<210> 55

<211> 805

<212> DNA

<213> Rattus norvegicus

<400> 55

tctagcgaac	cccttcgcga	aggggttcgc	ttcttacct	gtggagaaag	gggcaggagg	60
aacctcctgt	gttaggagga	agctggagct	taccactgtg	agaggacaga	tgtggactga	120
gaattttctt	agtgtcagt	ggcacttccc	aaggactccc	ctccccttgt	gctctgtgcg	180
gttttttagga	cagctaagat	gactgccacc	tgttgtggca	ggcccgat	gtcttgttct	240
ccccttactg	taccccgata	taatctctgt	tgatcaacag	gactacccca	agaatccaca	300
tgttctcccc	cgtaaccagg	cagctgtctg	gttcatgcct	tcttcccttc	aaacccaacc	360
cagcgccttt	gttagtgaag	aggtggtcca	tggactgatg	acaagttatt	agcactggat	420
gctgtttcca	tagtgacaag	cctatacctc	ttcccaccct	ttagtgcgca	gtgggctgct	480
gcttcagtat	cctcccagct	cagttttatt	agatcaaagc	tgcccttggg	caccatgttg	540
gccacctcaa	tcaccagcca	aaatggtcgc	tttgtccacc	agaggtcaag	ccatctttct	600
ggcgctgtag	ttcccagctc	cttctaggga	acaggaagtt	gatattgcca	tgggggaggt	660
ggcggggtgt	ggcgcgcacc	tcaatagttt	tactgtaaaa	gggaaatttg	aacaagaaca	720
acaacaaaaa	aaaaaaaaaa	acaaagaaaa	aaataaaaaa	ctttaaaaagt	tgaaaaaaaaa	780
aaaaaaaaaa	aaaaaaagcg	gccgc				805

<210> 56

<211> 1407

<212> DNA

<213> Rattus norvegicus

<220>

<221> misc_feature

<222> (1)...(1407)

<223> n = A,T,C or G

<221> CDS

<222> (90)...(431)

<400> 56

tctagcgaac	cccttcgctg	ggacccgcaa	ctaccaactg	ccgcctggat	cctaggtgag	60
ctgtgggctc	tgacagcgct	gtggctaac	atg gca ccc	aaa aag aag act ctc		113
			Met Ala Pro	Lys Lys Lys Thr Leu		
			1	5		
aag aag aac	aaa ccc gag	atc aat gag	atg acc atc	atc atc gtg	gaa gac	161
Lys Lys Asn	Lys Pro Glu	Ile Asn Glu	Met Thr Ile	Ile Val Glu	Asp	
10	15	20				
agc ccc cta	aac aag ctg	aat gct cta	aat ggg ctc	ctg ggg gga	gaa	209
Ser Pro Leu	Asn Lys Leu	Asn Ala Leu	Asn Gly Leu	Leu Gly Gly	Glu	
25	30	35	40			
aac agc ctt	agc tgt gtt	tct ttc gaa	cta aca gac	act tct tat	ggc	257
Asn Ser Leu	Ser Cys Val	Ser Phe Glu	Leu Thr Asp	Thr Ser Tyr	Gly	
45	50	55				
ccc aac ctc	ctg gaa ggt	tta agt aaa	atg cgt caa	gag agc ttt	cta	305

Pro Asn Leu Leu Glu Gly Leu Ser Lys Met Arg Gln Glu Ser Phe Leu
60 65 70

tgt gac ttg gtc atc ggt cca aaa cca agt cct ttg atg tcc ata agt 353
Cys Asp Leu Val Ile Gly Pro Lys Pro Ser Pro Leu Met Ser Ile Ser
75 80 85

caa gtg atg gct tcc tgc agc gag tct tct ata ata tcc tta aaa cga 401
Gln Val Met Ala Ser Cys Ser Glu Ser Ser Ile Ile Ser Leu Lys Arg
90 95 100

tcc atc gac aaa aag ggt aga cct caa tga tatcgnccct ttagggctac 451
Ser Ile Asp Lys Lys Gly Arg Pro Gln *
105 110

caccgtgata gcatatgcat acacnggaaa gctgcccctt ctttatacac aataaggaag 511
catcatttct gctgctgtgt acctccagat ccacactctt gtgaagatgt gcagcgactt 571
tctgatccga gagatcagtg ttgagaactg catgtatggt gttaacatgg ctgaaacata 631
ctgcttgaaa aatgcgaaag caacggccca gaaatttatc cgggataact tcattgaatt 691
tgccgactcc gaacaattta tgaagctgac gtttgaacag attaatgagc ttctcataga 751
tgatgacttg cagttgcctt ctgagctggt agcattccag attgcaatga aatggataga 811
attcaaccaa aagagagtga agcacgctgc ggatctttta agcaatattc gctttggtac 871
catctctgca caagacctgg tcaattacgt tcaaaccgta ccgagaatga tgcaagacgc 931
tgattgtcat aaactgcttg tggatgctat gaactaccac ttactacctt atcatcaaaa 991
cacgttgcaa tctaggcgga caagaattag aggcggctgc cgggttctga tcaactgtcg 1051
gggacgcctt ggctgactg agaagtcctt tagtagagac gtttatatag agaccctgaa 1111
aatggatgga gcaagcttac agaaatgcca gccaaagatt tcaatcagtg tgtggctgtg 1171
atggatggat tccttttatgt agcaggtggt gaggaccaga atgatgcgag aaaccaagcc 1231
aagcatgcag tcagcaattt ctgcaggtag cgatccccgc ttcaacacgt ggatccacct 1291
gggcagcatg aaccagaagc gcacgcactt cagcctgagc gtgttcaacg ggctcctgta 1351
cgccggtggn gggcnccagt gnganggata tctgcagaat tcggctagcc gaattc 1407

<210> 57
<211> 2004
<212> DNA
<213> Rattus norvegicus

<220>
<221> misc_feature
<222> (1)...(2004)
<223> n = A,T,C or G

<221> CDS
<222> (88)...(432)

<400> 57
tctagcgaac cccttcggac actgccagca tagacagcag cccttgctac tgtcccacca 60
ctgtacccca gagccccgac tagcagt atg ccg gga gcg cca ggg cct ggg cct 114
Met Pro Gly Ala Pro Gly Pro Gly Pro
1 5

gag gtg gct gca gcc ttt gag gaa cgg ttg agt cag gca cta cag gaa 162
Glu Val Ala Ala Ala Phe Glu Glu Arg Leu Ser Gln Ala Leu Gln Glu
10 15 20 25

ctg cag gca gtg gct gaa gca ggc cgg tca gcg gtg acc cag gca gct 210
Leu Gln Ala Val Ala Glu Ala Gly Arg Ser Ala Val Thr Gln Ala Ala

	30	35	40	
gat gca gcc cta gcc act gta gag cca gtg gct cag gca tct gaa gag				258
Asp Ala Ala Leu Ala Thr Val Glu Pro Val Ala Gln Ala Ser Glu Glu				
	45	50	55	
ctt cgg gcc gag aca gca gcc ctg agc cgg cgg ctg gat gcc ctg acc				306
Leu Arg Ala Glu Thr Ala Ala Leu Ser Arg Arg Leu Asp Ala Leu Thr				
	60	65	70	
agg cag gtg gag gtg ctg agc cta cgg ctg ggt gtt cca ctc gtg ccg				354
Arg Gln Val Glu Val Leu Ser Leu Arg Leu Gly Val Pro Leu Val Pro				
	75	80	85	
gac ctg gag tcc gag cta gag ccc agc gag ctg ttg ctg gct gct gcc				402
Asp Leu Glu Ser Glu Leu Glu Pro Ser Glu Leu Leu Leu Ala Ala Ala				
	90	95	100	105
gac cct gag gcc ctc ttc cag gca agc tga ggatgctggg acccccgtgg				452
Asp Pro Glu Ala Leu Phe Gln Ala Ser *				
	110			

ccacccgctt	gccttttagca	cccgccgcag	ctcttctgcg	ggccccctctc	gaagcagcag	512
tctcatggag	ccgatccag	cagagccccc	ctctgccaca	gtggaagcag	ctaattggaac	572
agagcagact	ctggacaaag	tgaacaaagg	cccagagggg	cggagccccc	tgagtgcaga	632
ggagctgatg	gccattgagg	acgaaggaat	cctggacaag	atgctggacc	aggctacgaa	692
ctttgaagag	cggaaagctca	tccgggctgc	gctccgtgag	ctccgacaaa	gaaagagaga	752
ccagagggac	aaggaacgag	aacggcggct	acgagaggca	cgggcccggc	caggcgagag	812
ccgaagcaat	atggctacta	cagagaccac	caccaggcac	aagccagagg	gcggtgatg	872
gctcggcggt	cagcacagtt	accaaaactg	agcgggtcgt	ccactccaat	gacggcacgc	932
agactgcgcg	caccaccaca	gtggagtcca	gtttcgtgag	gcgctcggag	aatggcagca	992
gcaagcaagc	agcagcacca	cggtcctaac	caagaccttt	tcctcttcct	cttcctcatc	1052
caaaaaaatg	ggcagtatct	tgcaccgaga	ggaccaaac	agctcacgtt	ctggcagcct	1112
ggcgccctc	gaaaaacgcc	aggcagagaa	gaagaaagag	ctcatgaagg	cacagagtct	1172
gcccagacc	taagcgtccc	aagcacgcaa	ggccatgatt	gagaaactag	agaaggaagg	1232
ctcttcgggc	agtcctggca	caccccgtac	agcggtagag	cgttctacca	gcttcggagt	1292
ccccaacgcc	aacagcatca	agcagatgtt	gctggactgg	tgccgagcca	agaccogtgg	1352
ctacgagcac	gtggacatcc	agaacttctc	tccagctgga	gtgatgggat	ggctttctgt	1412
gccttggtgc	acaatttctt	ccctgaggct	tttgactatg	gacagcttag	cccacaaaac	1472
cggcgccaga	actttgaaat	ggccttctca	tctgctgaga	cccattgcga	ctgcccgcag	1532
ctcctggata	cagaggacat	ggtgcggctt	cgagagcctg	actggaagtg	cgtgtacacg	1592
tacatccagg	agttctaccg	ctgtctggtc	cagaaggggc	tggtaaaaac	caaaaagtcc	1652
taacccctgc	ttggggcccc	acggatgctg	gtggactgtg	tacccttggt	ggaggtggag	1712
gacatgatga	tcatgggcaa	aaagccagac	cctaagtgcg	tcttcacctc	cgtgcaatcg	1772
ctgtacaacc	acctgcggcg	ccatgagctg	cgctgcgcg	gcaagaatgt	ctagccactg	1832
ctcacaccgc	ctgcgctgca	ggctgctgtc	ccacgcccc	aacaccggnc	cctncagtgn	1892
gcctgccact	gntgcccgtn	tgtcgaaaca	cctntcccct	tgtcacacgc	agnngnttga	1952
taaattatct	gntttnaaca	aaaaaaaaaa	aaaaaaaaaa	aaaagcggcc	gc	2004

<210> 58
 <211> 881
 <212> DNA
 <213> Rattus norvegicus

<220>
 <221> CDS
 <222> (84)...(377)

<400> 58

tctagcgaac cccttcgctc cagggcggtt gcctcctgct gacttgctct tcaccattag 60
acaagcctga cgtcaagacc cca atg gct aac gaa gct aac cct tgc cca tgt 113
Met Ala Asn Glu Ala Asn Pro Cys Pro Cys
1 5 10

gac att ggt cac agg cta gac tat ggt ggc atg ggc cag gaa gtt cag 161
Asp Ile Gly His Arg Leu Asp Tyr Gly Gly Met Gly Gln Glu Val Gln
15 20 25

gtt gag cac atc aag gca tat gtc acc cgg tcc cct gtg gat gca ggc 209
Val Glu His Ile Lys Ala Tyr Val Thr Arg Ser Pro Val Asp Ala Gly
30 35 40

aaa gct gtg att gtt gtc cag gat ata ttt ggc tgg cag ctg tcc aac 257
Lys Ala Val Ile Val Val Gln Asp Ile Phe Gly Trp Gln Leu Ser Asn
45 50 55

acc agg tat atg gct gac atg att gct gga aat gga tac aca act att 305
Thr Arg Tyr Met Ala Asp Met Ile Ala Gly Asn Gly Tyr Thr Thr Ile
60 65 70

gcc cag act tct ttg tgg gtc aag agc cat ggg acc cgg ctg gtg att 353
Ala Gln Thr Ser Leu Trp Val Lys Ser His Gly Thr Arg Leu Val Ile
75 80 85 90

ggg cca cct tcc ctg agt ggt tga aatcaagaaa tgccagaaaa atcaaccgag 407
Gly Pro Pro Ser Leu Ser Gly *
95

agggtgatgc tgtcttgagg tatctgaaac aacagtgtca tgcccagaag attggcattg 467
tgggcttctg ctgggggggt attgtggtgc accacgtgat gacgacatat ccagaagtca 527
gagcgggggt gtctgtctat ggtatcatca gagattctga agatgtttat aatttgaaga 587
acccaacgtt gtttatcttt gcagaaaatg atgctgtgat tccacttgag caggtttcta 647
tactgatcca gaagcttaaa gaacactgca tagttaatta ccaagttaag acattttctg 707
ggcaaaactca tggctttgtg catcggaaga gagaagactg ctcccctgca gacaaaccct 767
acattgagga agcgaggagg aatctcatcg aatggctgaa caagtatatt taacagcact 827
caagcacaata ttttgaataa ttaaattgac ccgaataatt aaattgaccc gaat 881

<210> 59

<211> 97

<212> PRT

<213> Rattus norvegicus

<400> 59

Met Ala Asn Glu Ala Asn Pro Cys Pro Cys Asp Ile Gly His Arg Leu
1 5 10 15
Asp Tyr Gly Gly Met Gly Gln Glu Val Gln Val Glu His Ile Lys Ala
20 25 30
Tyr Val Thr Arg Ser Pro Val Asp Ala Gly Lys Ala Val Ile Val Val
35 40 45
Gln Asp Ile Phe Gly Trp Gln Leu Ser Asn Thr Arg Tyr Met Ala Asp
50 55 60
Met Ile Ala Gly Asn Gly Tyr Thr Thr Ile Ala Gln Thr Ser Leu Trp
65 70 75 80
Val Lys Ser His Gly Thr Arg Leu Val Ile Gly Pro Pro Ser Leu Ser

Gly

<210> 60
 <211> 245
 <212> PRT
 <213> Rattus norvegicus

<400> 60

Met	Lys	Pro	Glu	Asn	Cys	Phe	Thr	Ile	Thr	Ser	Ser	Phe	Trp	Pro	Ser
1				5					10					15	
Leu	Arg	Pro	Trp	Lys	Ile	Val	Cys	Gly	Asp	Ser	Tyr	Arg	Lys	Gln	Thr
			20					25					30		
Gly	Arg	Leu	Lys	Gln	Thr	Arg	Ser	Lys	Val	Arg	Cys	Arg	Cys	His	Gly
		35					40				45				
Gln	Thr	Leu	Gly	Glu	Ala	Trp	Ala	Thr	Leu	Val	Phe	Met	Leu	Glu	Arg
	50				55						60				
Arg	Arg	Glu	Leu	Leu	Gly	Leu	Thr	Ser	Glu	Phe	Phe	Gln	Ser	Ala	Leu
65					70					75					80
Glu	Phe	Ala	Ile	Lys	Ile	Asp	Gln	Ala	Glu	Asp	Phe	Leu	Gln	Asn	Pro
				85					90					95	
His	Glu	Phe	Glu	Ser	Ala	Glu	Ala	Leu	Gln	Ser	Leu	Leu	Leu	Leu	His
			100					105					110		
Asp	Arg	His	Ala	Lys	Glu	Leu	Leu	Glu	Arg	Ser	Leu	Val	Leu	Leu	Asn
		115					120					125			
Lys	Ser	Gln	Gln	Leu	Thr	Asp	Phe	Ile	Glu	Lys	Phe	Lys	Cys	Asp	Gly
		130				135					140				
Ser	Pro	Val	Asn	Ser	Glu	Leu	Ile	Gln	Gly	Ala	Gln	Ser	Ser	Cys	Leu
145					150					155					160
Lys	Ile	Asp	Ser	Leu	Leu	Glu	Leu	Leu	Gln	Asp	Arg	Arg	Arg	Gln	Leu
				165					170					175	
Asp	Lys	His	Leu	Gln	Gln	Gln	Arg	Gln	Glu	Leu	Ser	Gln	Val	Leu	Gln
			180					185						190	
Leu	Cys	Leu	Trp	Asp	Gln	Gln	Glu	Ser	Gln	Val	Ser	Cys	Trp	Phe	Gln
		195					200					205			
Lys	Thr	Ile	Arg	Asp	Leu	Gln	Glu	Gln	Ser	Leu	Gly	Ser	Ser	Leu	Ser
	210					215					220				
Asp	Asn	Lys	Glu	Leu	Ile	Arg	Lys	His	Glu	Asp	Leu	Pro	Ser	Lys	Gln
225					230					235					240
Arg	Val	Pro	Ala	Val											
				245											

<210> 65
 <211> 142
 <212> PRT
 <213> Rattus norvegicus

<220>

<221> VARIANT

<222> (1)...(142)

<223> Xaa = Any Amino Acid

<400> 65

Met	Thr	Glu	Ser	Val	Val	Cys	Thr	Gly	Ala	Val	Ser	Thr	Val	Lys	Glu
1				5					10					15	
Val	Trp	Glu	Glu	Arg	Ile	Lys	Lys	His	His	Glu	Asp	Val	Lys	Arg	Glu

	20		25		30										
Lys	Glu	Phe	Gln	Gln	Lys	Leu	Val	Arg	Ile	Trp	Glu	Asp	Arg	Val	Ser
	35					40					45				
Leu	Thr	Lys	Leu	Lys	Glu	Lys	Val	Thr	Arg	Glu	Asp	Gly	Arg	Ile	Ile
	50					55					60				
Leu	Arg	Ile	Glu	Lys	Glu	Glu	Trp	Lys	Thr	Leu	Pro	Ser	Ser	Leu	Leu
	65				70					75				80	
Lys	Leu	Asn	Gln	Leu	Gln	Glu	Trp	Gln	Leu	His	Arg	Thr	Gly	Leu	Leu
			85						90				95		
Lys	Ile	Pro	Glu	Phe	Ile	Gly	Arg	Phe	Gln	His	Leu	Ile	Gly	Leu	Asp
			100					105					110		
Leu	Ser	Arg	Asn	Thr	Ile	Ser	Glu	Ile	Pro	Pro	Arg	His	Trp	Thr	Xaa
		115					120					125			
His	Leu	Asp	Phe	Lys	Glu	Leu	Ile	Leu	Ser	Tyr	Thr	Lys	Ser		
	130					135					140				

<210> 69
 <211> 49
 <212> PRT
 <213> Rattus norvegicus

<400> 69
 Met Ser Ser Ser His Leu Arg Thr Arg Ser Ala Arg Thr Pro Gly Lys
 1 5 10 15
 Ile Pro Leu Ile Pro Ile Val Gly Asn Met Leu Pro Ala Val Gly His
 20 25 30
 Leu Ile Tyr Thr Phe Ser Gly Leu Thr His Tyr Pro Lys Asn Leu Leu
 35 40 45
 Thr

<210> 71
 <211> 70
 <212> PRT
 <213> Rattus norvegicus

<400> 71
 Met Glu Ile Asn Glu Lys Leu Ala Asp Ala Lys Ser Glu Ala Ala Met
 1 5 10 15
 Glu Glu Val Glu Ala Thr Val Arg Ala Lys Gln Lys Glu Phe Thr Asp
 20 25 30
 Asn Ile Asn Arg Ala Phe Glu Gln Gly Asp Phe Glu Lys Ala Lys Glu
 35 40 45
 Leu Leu Thr Lys Met Arg Tyr Phe Ser Asn Ile Glu Glu Lys Ile Lys
 50 55 60
 Leu Ser Lys Asn Pro Leu
 65 70

<210> 74
 <211> 113
 <212> PRT
 <213> Rattus norvegicus

<400> 74
 Met Ala Pro Lys Lys Lys Thr Leu Lys Lys Asn Lys Pro Glu Ile Asn
 1 5 10 15
 Glu Met Thr Ile Ile Val Glu Asp Ser Pro Leu Asn Lys Leu Asn Ala

		20						25						30					
Leu	Asn	Gly	Leu	Leu	Gly	Gly	Glu	Asn	Ser	Leu	Ser	Cys	Val	Ser	Phe				
		35					40					45							
Glu	Leu	Thr	Asp	Thr	Ser	Tyr	Gly	Pro	Asn	Leu	Leu	Glu	Gly	Leu	Ser				
		50				55					60								
Lys	Met	Arg	Gln	Glu	Ser	Phe	Leu	Cys	Asp	Leu	Val	Ile	Gly	Pro	Lys				
65					70				75						80				
Pro	Ser	Pro	Leu	Met	Ser	Ile	Ser	Gln	Val	Met	Ala	Ser	Cys	Ser	Glu				
				85					90					95					
Ser	Ser	Ile	Ile	Ser	Leu	Lys	Arg	Ser	Ile	Asp	Lys	Lys	Gly	Arg	Pro				
		100						105					110						

Gln

<210> 76
 <211> 114
 <212> PRT
 <213> Rattus norvegicus

Met	Pro	Gly	Ala	Pro	Gly	Pro	Gly	Pro	Glu	Val	Ala	Ala	Ala	Phe	Glu				
1			5					10						15					
Glu	Arg	Leu	Ser	Gln	Ala	Leu	Gln	Glu	Leu	Gln	Ala	Val	Ala	Glu	Ala				
		20					25					30							
Gly	Arg	Ser	Ala	Val	Thr	Gln	Ala	Ala	Asp	Ala	Ala	Leu	Ala	Thr	Val				
		35				40					45								
Glu	Pro	Val	Ala	Gln	Ala	Ser	Glu	Glu	Leu	Arg	Ala	Glu	Thr	Ala	Ala				
		50			55				60										
Leu	Ser	Arg	Arg	Leu	Asp	Ala	Leu	Thr	Arg	Gln	Val	Glu	Val	Leu	Ser				
65				70					75					80					
Leu	Arg	Leu	Gly	Val	Pro	Leu	Val	Pro	Asp	Leu	Glu	Ser	Glu	Leu	Glu				
			85				90						95						
Pro	Ser	Glu	Leu	Leu	Leu	Ala	Ala	Ala	Asp	Pro	Glu	Ala	Leu	Phe	Gln				
		100					105						110						

Ala Ser

<210> 77
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer specific for vector to produce "Driver DNA".

<400> 77
 cgtatgttgt gtggaattgt gagcg

25

<210> 78
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer specific for vector to produce "Driver DNA".

<400> 78
gatgtgctgc aaggcgatta agttg 25

<210> 79
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligos corresponding to polylinker sequence.

<400> 79
gccgccagtg tgctggaatt cggctagc 28

<210> 80
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligos corresponding to polylinker sequence.

<400> 80
cgaattctgc agatatccat cacactgg 28

<210> 81
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligos corresponding to polylinker sequence.

<400> 81
ctagagggcc caattcgccc tatag 25

<210> 82
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligos corresponding to polylinker sequence.

<400> 82
tgagtcgtat tacaattcac tggcc 25

<210> 83
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligos corresponding to polylinker sequence.

<400> 83

20

<211> 18

<213> Artificial Sequence

<223> Oligos corresponding to polylinker sequence.

18

ttttttttttttt tttttttttt

1970-1971	1972-1973	1974-1975	1976-1977	1978-1979	1980-1981	1982-1983	1984-1985	1986-1987	1988-1989	1990-1991	1992-1993	1994-1995	1996-1997	1998-1999	2000-2001	2002-2003	2004-2005	2006-2007	2008-2009	2010-2011	2012-2013	2014-2015	2016-2017	2018-2019	2020-2021	2022-2023	2024-2025	2026-2027	2028-2029	2030-2031	2032-2033	2034-2035	2036-2037	2038-2039	2040-2041	2042-2043	2044-2045	2046-2047	2048-2049	2050-2051	2052-2053	2054-2055	2056-2057	2058-2059	2060-2061	2062-2063	2064-2065	2066-2067	2068-2069	2070-2071	2072-2073	2074-2075	2076-2077	2078-2079	2080-2081	2082-2083	2084-2085	2086-2087	2088-2089	2090-2091	2092-2093	2094-2095	2096-2097	2098-2099	2100-2101	2102-2103	2104-2105	2106-2107	2108-2109	2110-2111	2112-2113	2114-2115	2116-2117	2118-2119	2120-2121	2122-2123	2124-2125	2126-2127	2128-2129	2130-2131	2132-2133	2134-2135	2136-2137	2138-2139	2140-2141	2142-2143	2144-2145	2146-2147	2148-2149	2150-2151	2152-2153	2154-2155	2156-2157	2158-2159	2160-2161	2162-2163	2164-2165	2166-2167	2168-2169	2170-2171	2172-2173	2174-2175	2176-2177	2178-2179	2180-2181	2182-2183	2184-2185	2186-2187	2188-2189	2190-2191	2192-2193	2194-2195	2196-2197	2198-2199	2200-2201	2202-2203	2204-2205	2206-2207	2208-2209	2210-2211	2212-2213	2214-2215	2216-2217	2218-2219	2220-2221	2222-2223	2224-2225	2226-2227	2228-2229	2230-2231	2232-2233	2234-2235	2236-2237	2238-2239	2240-2241	2242-2243	2244-2245	2246-2247	2248-2249	2250-2251	2252-2253	2254-2255	2256-2257	2258-2259	2260-2261	2262-2263	2264-2265	2266-2267	2268-2269	2270-2271	2272-2273	2274-2275	2276-2277	2278-2279	2280-2281	2282-2283	2284-2285	2286-2287	2288-2289	2290-2291	2292-2293	2294-2295	2296-2297	2298-2299	2300-2301	2302-2303	2304-2305	2306-2307	2308-2309	2310-2311	2312-2313	2314-2315	2316-2317	2318-2319	2320-2321	2322-2323	2324-2325	2326-2327	2328-2329	2330-2331	2332-2333	2334-2335	2336-2337	2338-2339	2340-2341	2342-2343	2344-2345	2346-2347	2348-2349	2350-2351	2352-2353	2354-2355	2356-2357	2358-2359	2360-2361	2362-2363	2364-2365	2366-2367	2368-2369	2370-2371	2372-2373	2374-2375	2376-2377	2378-2379	2380-2381	2382-2383	2384-2385	2386-2387	2388-2389	2390-2391	2392-2393	2394-2395	2396-2397	2398-2399	2400-2401	2402-2403	2404-2405	2406-2407	2408-2409	2410-2411	2412-2413	2414-2415	2416-2417	2418-2419	2420-2421	2422-2423	2424-2425	2426-2427	2428-2429	2430-2431	2432-2433	2434-2435	2436-2437	2438-2439	2440-2441	2442-2443	2444-2445	2446-2447	2448-2449	2450-2451	2452-2453	2454-2455	2456-2457	2458-2459	2460-2461	2462-2463	2464-2465	2466-2467	2468-2469	2470-2471	2472-2473	2474-2475	2476-2477	2478-2479	2480-2481	2482-2483	2484-2485	2486-2487	2488-2489	2490-2491	2492-2493	2494-2495	2496-2497	2498-2499	2500-2501	2502-2503	2504-2505	2506-2507	2508-2509	2510-2511	2512-2513	2514-
-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-------